PACKAGE engineering

How "deal" cans get coupons

Doing this at line pace means keeping cans upright, spraying on adhesive. Electrical controls interlock with the line for hitch-free running—Page 47

Put cushions outside the crate

Instead of the foamed plastic cushioning going inside you put it in the skids holding the crate. This reduces package cube and cuts assembly time—Page 53

Keep your glass specs simple

Base them on performance needs and make them fit a container's over-all function. This prevents your getting lost in elaborate details—Page 57

New products, literature—Page 86

Complete contents—Page 2

JULY 19[illegible]
VOLUME [illegible]

The master barber shaves packaging costs with bundling by Scandia

The Gillette Company uses Scandia Bundling Machines to overwrap its wide variety of distribution packages. Why? The reason is obvious. Crisp cellophane overwraps with opening tape are attractive, easily identified, and easy to handle.

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Call or write today for an analysis of your overwrapping needs. No obligation on your part. Scandia Packaging Machinery Company, North Arlington, New Jersey. WYman 1-8400.

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Photo courtesy of L. H. Philo Corp., New York, N. Y., and Package Machinery Co., Springfield, Mass.

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VITAFILM seals tight with a weld that's as strong as the film itself—stays fresh looking—doesn't get brittle and crack—doesn't split or run. Result: A gleaming, glass-clear package that keeps contents clean and appealing, that sells full time.

VITAFILM handles easily on packaging machinery, too—seals quickly and permanently over a wide range of temperatures. In most cases Goodyear can convert your present equipment at little or no ultimate cost to you. If you're packaging paper products, hardware or fresh produce, better put VITAFILM to work for you. Write: Goodyear, Packaging Films Dept. G-6432, Akron 16, Ohio. Remember, lots of good things come from Goodyear.

BY GOODYEAR

Vitafilm, a Polyvinyl chloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

PACKAGE engineering

JULY 1961 • VOLUME 6 • NUMBER 7 • AN ANGUS J. RAY PUBLICATION

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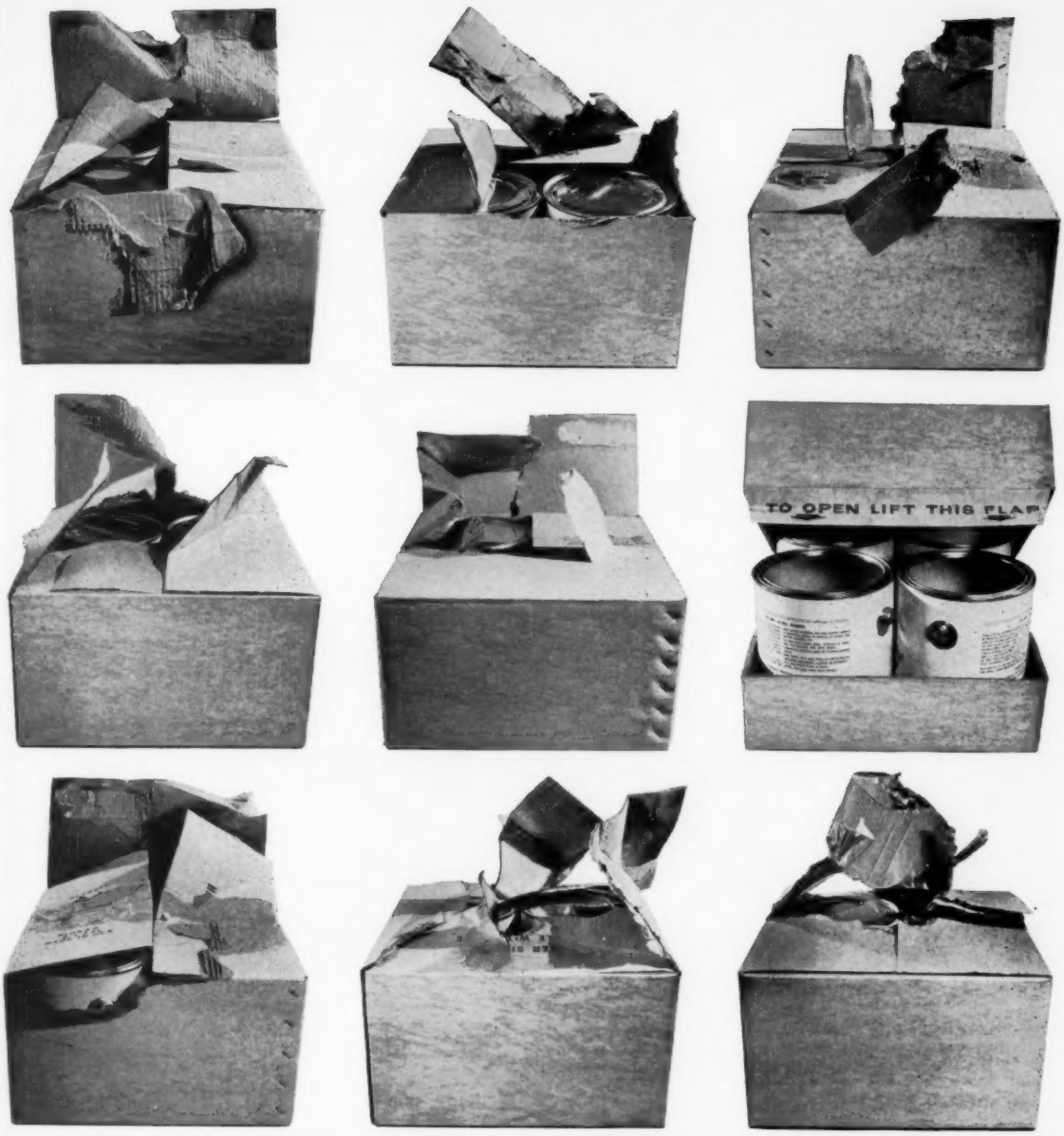
Our December, 1961 issue will carry a cumulative editorial index for the year, listing our feature articles by subject and author.

Package Engineering is indexed in Engineering Index



WHICH ONE COMES FROM FIBREBOARD?

Which container was created by a team of industrial specialists—including designers and engineers, salesmen and scientists? Which container comes from the company where every major area is covered the same, sensible way: by teams of experts in that specific field? Which container, in short, comes from Fibreboard? Your customers can pick it out—and do.

The container from Fibreboard: MT-Quik, the flip-top shipping case. Just pull the flap; the whole top-half flips open. No more tug-of-wars, knicked fingers, frayed tempers. (And no more digging to remove the contents.) Two sizes hold four or six 1-gallon cans. Shouldn't your containers come from this kind of company, this type of concept? Write Fibreboard Paper Products Corporation, 475 Brannan Street, San Francisco. (Also New York, Chicago, Los Angeles, other major cities.)

A note from the Publisher

Are idea men nonconformists?

In this column a few months ago, I commented on the fact that younger engineering graduates were granted more patents than their elders and speculated on the idea that perhaps the older men were in jobs that did not allow them time to think creatively.

A number of readers have written their opinions to me on this subject. One reader pointed out that having attained a certain educational level does not necessarily help or hinder thinking creatively. He cited Thomas Edison and Henry Ford, among others, as examples of great creative thinkers with a minimum of formal education. He also pointed out that the pressure to conform in school, in business, and all along the line tends to stifle creativity. This pressure to conform tends to lead to accepting certain principles or ideas as either right or wrong simply because a majority of contemporaries believes them to be true or false. Six hundred years ago, for example, most of the world's best brains believed the world to be flat, and I'm sure that some of today's scientific beliefs will undoubtedly be proved wrong in the next 25 years or so.

It has been my observation that in most good packaging operations there is at least one individual who is a creative thinker along practical lines and whose thoughts are not limited by how things have been done in the past. Frequently this individual does not have a high degree of formalized education, nor is this a prerequisite, but works out or suggests gadgets to go on a packaging line to make it run more efficiently along patterns not suggested in a textbook.

To illustrate my point, a few years ago a packaging plant in Michigan had a fill control problem that seemed to baffle its engineering staff. The density of the product varied, and more time was spent adjusting the machine than was spent running the line. An operator on the line, however, solved the problem with a piece of string and a few metal washers. Perhaps this is an extreme example, but in just about every well-run plant there are gadgets added to packaging machinery to solve a problem peculiar to that plant.

In the interest of getting out production you cannot have every line operator trying to modify equipment, but you can encourage more thinking about ways of increasing efficiency.

Packaging offers great opportunity for increasing profits by getting the most out of your equipment. The AC Spark Plug Division of General Motors requires that everyone, from the general manager on down, submit a certain number of ideas on improving efficiency.

This system could pay real dividends if everyone engaged in a packaging operation, from the foreman on up, were required to submit one idea a month.

Certainly many of them would be valueless, but by forcing your staff to think specifically and constructively, you would undoubtedly find a large number of their ideas not only usuable but of great value in increasing efficiency or improving your package.

Angus J. Ray

Publisher

PACKAGE engineering®

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MEANT FOR EACH OTHER

■ M-P bag adhesives match the built-in properties of your bag. Our moistureproof adhesive matches your moistureproof paper. Our strong bonding adhesive complements your heavy duty bag stock. We'll supply the right adhesive to bond kraft to kraft, foil to paper, or any bag stock to any other on any machine you can name. ■ Our new bag adhesive, "1380," is a latex type for bottoms and seams of polyethylene-coated multi-wall bags and various wet-strength kraft bags. If you're using these materials, ask for details on "1380." If you're using other materials, name them. We'll recommend an adhesive to fit.

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For your calendar

August 14-18. AMA workshop seminar on using military preservation and packaging data systems:
Colgate University, Hamilton, N.Y. Contact: John L. Wood, packaging coordinator, American Management Association, 1515 Broadway, New York 36, N.Y. *Telephone: JUdson 6-8100.*

September 17-22. University of California short course in plant layout, material handling, warehousing and shipping:
Lake Arrowhead Conference Center, Lake Arrowhead, Calif. Contact: Dr. Sam Houston, Department K, University Extension, University of California, Los Angeles 24, Calif. *Telephone: GRanite 3-0971 or BRadshaw 2-6161.*

September 18-23. The University of Kansas 6th Annual Plant Layout and Facilities Planning Course:
Town House Hotel, Kansas City, Kan. Contact: E. S. Avison, assistant manager, The University of Kansas Extension Center, 39th and Rainbow Blvd., Kansas City 12, Kan. *Telephone: KEndall 2-1538 or 2-9387.*

October 1-4. Produce Packaging Association 11th Annual Convention and Exposition:
Chase–Park Plaza Hotel, St. Louis, Mo. Contact: Robert L. Carey, executive secretary, Produce Packaging Association, P.O. Box 29, Newark, Del. *Telephone: ENdicott 8-2906.*

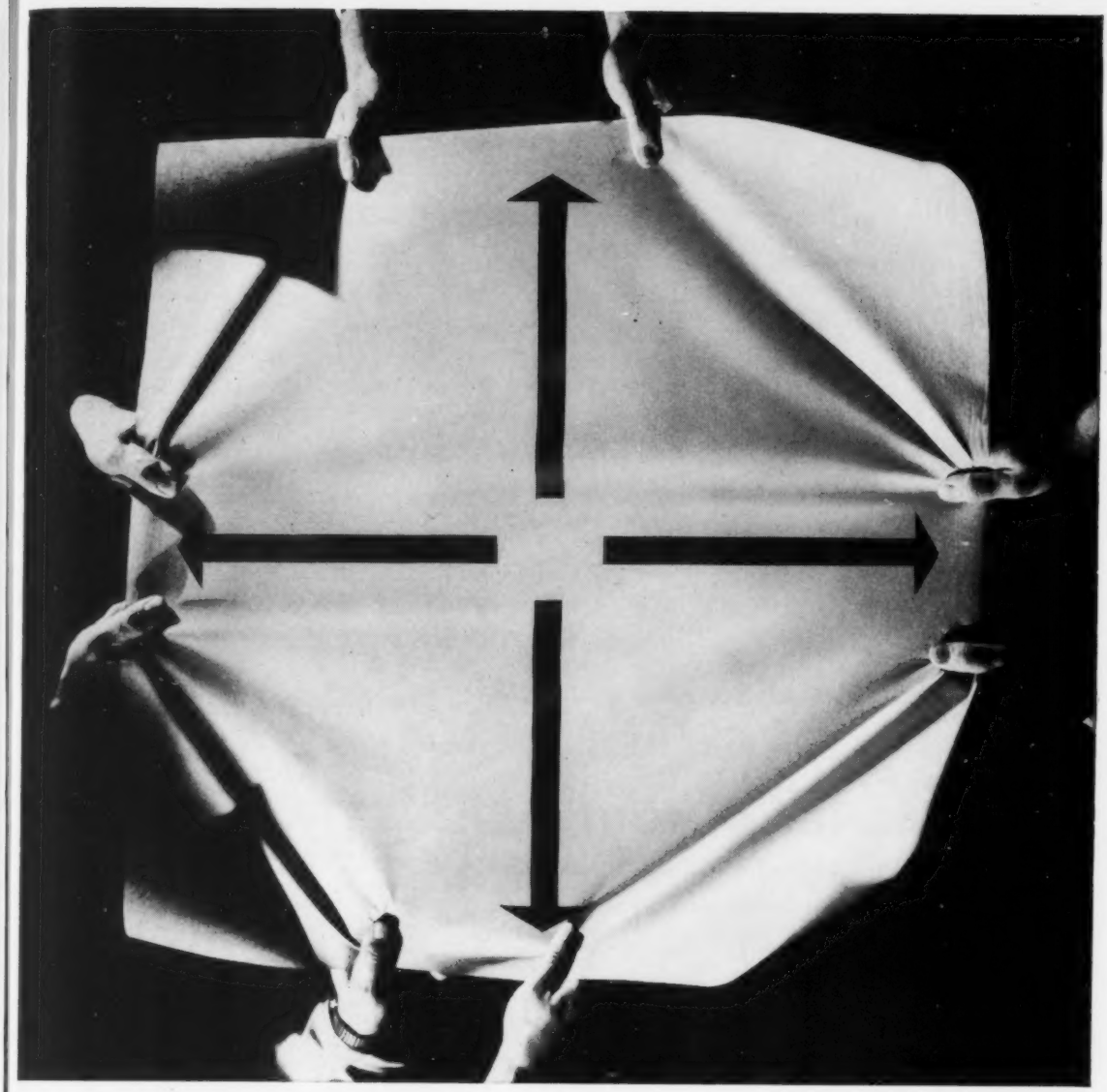
October 10-12. Department of Defense (Director of Defense Research and Engineering) 30th Symposium on Shock, Vibration and Associated Environments:
Statler Hilton Hotel, Detroit, Mich. Contact: Code 4021, U.S. Naval Research Laboratory, Washington 25, D.C. *Telephone: JOhnson 3-6600, Ext. 2220.*

October 18-20. Packaging Institute 23rd Annual National Packaging Forum:
Biltmore Hotel, New York, N.Y. Contact: Charles A. Feld, executive director, Packaging Institute, 342 Madison Ave., New York 17, N.Y. *Telephone: MUrray Hill 7-8875.*

November 7-10. Packaging Machinery Manufacturers Institute Show of 1961:
Cobo Hall, Detroit, Mich. Contact: W. L. Redding, Hanson & Shea, Inc., One Gateway Center, Pittsburgh 22, Pa. *Telephone: ATlantic 1-8552.*

November 8-9. PMMI Preventive Maintenance Conference-Workshop:
Cobo Hall, Detroit, Mich. Contact: Richard Wellbrock, New Jersey Machine Corp., 1600 Willow Ave., Hoboken, N.J. *Telephone: OLdfield 9-0483.*

November 13-14. Society of Packaging & Handling Engineers 1961 National Packaging and Materials Handling Competition, and 7th Annual Eastern Packaging and Handling Show:
Fifth Regiment Armory Hall, Baltimore, Md. Contact: C. Telfair Leinbach, Jr., 3120 St. Paul St., Baltimore 18, Md. *Telephone: HOpkins 7-6363. (End)*



Expanda-Kraft has high CD stretch to provide balanced strength

Expanda-Kraft has the highest *cross direction* stretch of the leading extensible papers now on the market. *Why?* Expanda-Kraft is made by H&W's roll-crepe process. This production technique gives the paper an extra measure of *cross direction* stretch. In brief: two-way stretch with superior strength and resilience.

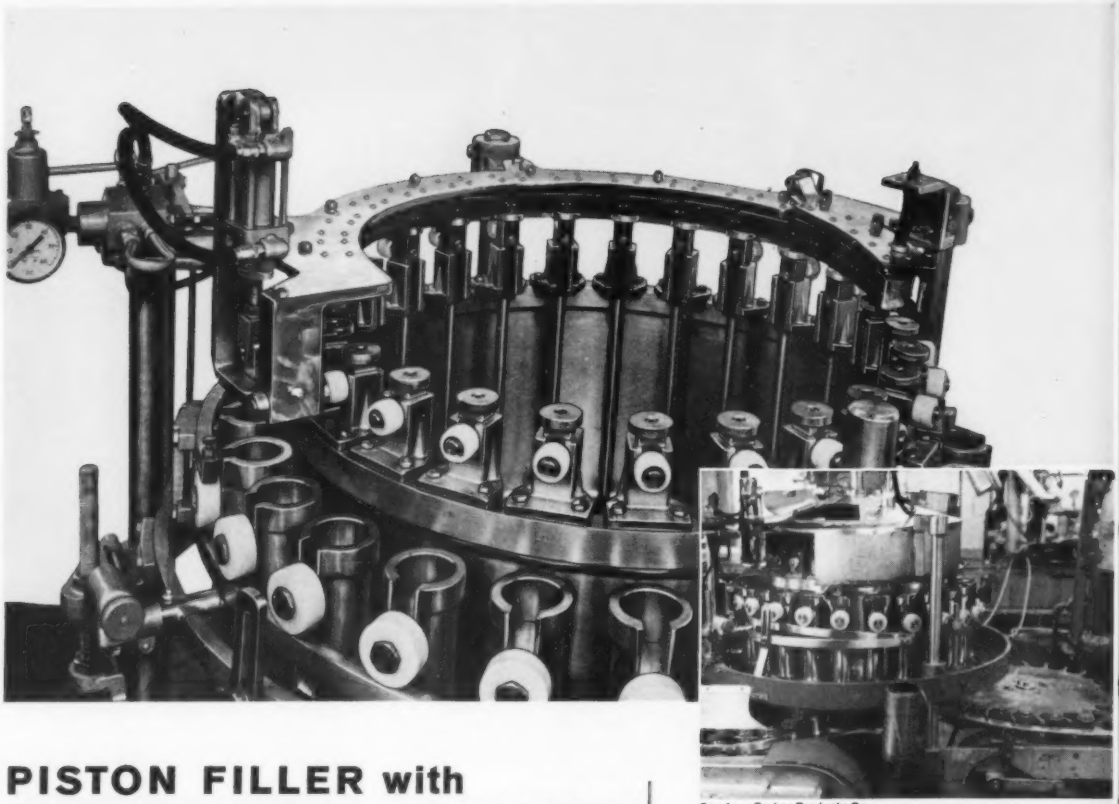
The average package is bumped, jarred and jolted during handling and shipping. These impacts come from all directions (and a package has to be strong enough to stand them). With two-way stretch Expanda-Kraft, a package can absorb plenty of rough treatment—from any direction.

You can use Expanda-Kraft for wrappers, multiwall bags, laminations, linings, backings or special protective packaging. It comes in 40, 50, 60, 70, 80 and 100-pound basis weights. Available in white, semi-bleached and natural.

H&W does not make multiwall bags or other converted packaging. But we *do* supply a wide range of papers for packaging. We'll gladly assist you in product development and improvement. For information and samples, write Hollingsworth & Whitney, 230 Park Avenue, New York 17, N.Y., or 111 West Washington Street, Chicago 2, Illinois.

EXPANDA-KRAFT®

Hollingsworth & Whitney Division
SCOTT PAPER COMPANY



Courtesy Gerber Products Co.

PISTON FILLER with NEW MAGNETIC MONITOR*

prevents valve damage and costly down-time

The Magnetic Monitor on VOTATOR piston fillers consists of a combination of indestructible permanent magnets and the pneumatic lift for positioning the valves. This assembly, with only two moving sections, provides:

a. Positive no-can, no-fill operation.
b. The elimination of *every* possibility of a valve jam due to foreign material in the product or the malfunction of any associated equipment.
c. A completely smooth valve action to eliminate all splashing of product.

This is another VOTATOR piston filler *first* that warrants your immediate interest. You will quickly recognize the advantages and important savings it offers. Write *today* for Bulletins PED259 and PED260. Girdler Process Equipment Division, Chemetron Corporation. Louisville 1, Kentucky. Sales Offices: Chicago; Louisville; Marietta, Ga.; Montclair, N.J.; San Francisco.

*Trademark; Patent applied for

New, higher standards of packaging economy are being realized by processors of a wide variety of products. VOTATOR Piston Fillers give close-tolerance filling of liquids and viscous materials at remarkable speeds. No-container-no-fill controls safeguard against interruption of operation and waste. And, new "Magnetic Monitor" prevents costly damage and downtime.

Courtesy The Wakefield Group

Votator
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DU PONT **PACKAGING TRENDS**

Drum faucet molded of ALATHON® 1413 controls flow, resists corrosion, cuts costs

Industrial drum faucets molded of ALATHON 1413 polyethylene resin are used to control the dispensing of heavy-duty soaps and detergents, from full flow to a trickle. The Davies-Young Soap Company, Dayton, Ohio, reports that the polyethylene faucets do not discolor or corrode and cost considerably less than previously used metal faucets.

In addition, the new faucets, molded by Rieke Metal Products, Auburn, Indiana, are tough, easy to use, prevent leakage and, because liquid flow can be controlled, eliminate wasting materials while dispensing from drum.

A molded skirt at the base and the inherent flexibility of polyethylene allows the faucets to be firmly tightened on the drum. Moreover, these polyethylene faucets are specially designed to prevent overtightening — a common cause of failure in previous devices of this type.

Chemical crack resistance has also been designed into these units through the specification of ALATHON 1413.

Quite a combination of advantages —made possible by the selection of the specific formulation of ALATHON best suited for the job. For information about ALATHON resins that may help you, mail the coupon at right.

Re-usable pour·n·seal snap-on dispenser is molded of ALATHON® 37

Trademark Patent Pending

Here's why: it's a good, novel design idea—this re-usable closure-dispenser for canned chocolate syrup, juices, baby formulas and oils is snapped on after the can has been opened, pours the contents out of a non-drip spout, prevents surging with a unique venting system. The three-piece unit comes apart and reassembles for easy cleaning.

The POUR-N-SEAL closure is molded of Du Pont ALATHON 37, a polyethylene resin that has the specific combination of properties needed to make this idea work. Namely: ALATHON 37 is easily moldable . . . parts are warp-free . . . have the proper stiffness for a good snap fit . . . can be refrigerated without embrittling. And, of course, ALATHON 37 is tasteless, odorless, non-toxic.

The POUR-N-SEAL can closure was designed by Boris Kleid, Siax Industries of Mass., Inc., Newton Highlands 61, Mass.; molded by Crystal Thermoplastics, Pawtucket, R. I.; being used by the Hershey Chocolate Corporation, Hershey, Pa., as a premium item for their one-lb. chocolate-syrup can.

This is another example of a good packaging design made to work economically by the choice of the right formulation of ALATHON polyethylene resin. If you'd like to put a packaging idea of yours into production with a minimum of problems and at lowest possible cost, be sure to investigate the variety of Du Pont's ALATHON polyethylene resins. Simply mail the coupon below for additional specific information.

Du Pont Company, Dept. PA-7
Room 2507A, Nemours Bldg., Wilmington 98, Delaware

Please send me more information on the above and on other applications in moldings with ALATHON. (A-17291)

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DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

The PULSE of packaging

Groups in the news:

Members of SOCIETY OF PACKAGING AND HANDLING ENGINEERS overwhelmingly ratified the decision of its directors to establish a junior membership classification. Details of this new membership category are available from SPHE headquarters, 14 E. Jackson Blvd., Chicago 4, Ill.

Next fall SPHE's Eastern chapter is offering a basic course on cushioning. Sessions will take place in New York City on alternate Thursday evenings from September through November, 1961.

Those wishing to attend should contact A. D. Brown, Herculite Protective Fabrics Inc., 661 Fourth St., Newark 7, N.J. Mr. Brown is coordinator of the course.

Meanwhile, SPHE's national education committee chairman, Charles J. Zusi, Evanston, Ill. packaging consultant, says his group's plans are developing and include service to SPHE chapters, individual members, and educational institutions.

This committee expects to offer such aids as a bibliography of technical papers, lists of speakers and motion picture films, educational course outlines, and the help of committee members in arranging speakers for meetings and programs.

Reporting a final count of 216 companies occupying 98,208 sq. ft. of exhibit space in Detroit's Cobo Hall, the directors of PACKAGING MACHINERY MANUFACTURERS INSTITUTE *have hung up the "sold out" sign.*

Even though the 1961 show uses 50 per cent more space than the 1959 show did, this year's show promises "a strong engineering emphasis," according to PMMI show committee chaiman, W. W. Anthony, Jr., executive vice president, Crompton & Knowles Packaging Corp.

The 1961 PMMI show's conference workshop on preventive maintenance now has five moderators, according to conference workshop chairman, Richard Wellbrock, New Jersey Machine Corp.

These include J. D. Breslin, The Wm. S. Merrell Co., Cincinnati; Walter Jaqueman, The Pillsbury Co., Hamilton, Ohio; Norman Yaeger, Colgate-Palmolive Co., New York; John S. Stokes, Stokes & Smith Plant, FMC Corp., Philadelphia; and Glenn Engle, The Cryovac Co., Woburn, Mass.

Conference workshop sessions will take place from 9:30 a.m. till noon on November 8 and 9. Registered visitors to the show (November 7-10) may attend the conference workshop without additional charge.

Trends to watch:

We hear that adhesive manufacturers and laminators of aluminum foil are enthused about their current prospects. They note a 5 to 10 per cent increase in the current usage of foil lamination. Further, they cite still more growth in such newer applications as foil with heavy paper and foil as a component of corrugated board.

With foil producers now doing more of their own converting, predictions indicate lower costs in applications such as using foil as a pouch component for dehydrated food packaging.

At the same time, we hear that some foil people are concerned over the potential inroads of metallized paper on laminated foil usage. Other experts, however, are more cautious. They think that any "major spurts" in metallized papers are at least a year away.

Meanwhile corrugated box producers wondering how to sell all the tonnage coming out of their mills look to bulk packaging as a big potential user of corrugated. They point out as examples the plastics and chemicals industries.

Elaborating on this trend, William Smith, UNION BAG-CAMP PAPER CORP., *recently told a TAPPI meeting that the current popularity of 1,000-, 1,500-, and 2,000-lb. loads per box is common.*

He says such containers are proving useful for products of 40 to 235 lb./cu. ft. density such as free-flowing powders and granules.

STONE CONTAINER CORP.'s Richard H. Johnson told the same TAPPI meeting of trends to new applications of board (for example bulk packages to replace metal drums and pails) and improvement of boards through refined mill technology.

Plastics continue to find new applications. We understand GENERAL ELECTRIC CO. *recently shipped 120-ton generators across six states with each generator in shipment resting on 200 lb. of rigid urethane foam blocks.*

We hear GE expects to save up to $500 per shipment. Packaging requirements indicate the foam must withstand 9G horizontal and 5G vertical impacts.

Packagers whose products go through vending machines are in a "growth" situation: NATIONAL AUTOMATIC MERCHANDISING ASSOCIATION says the number of machines shipped in 1960 increased

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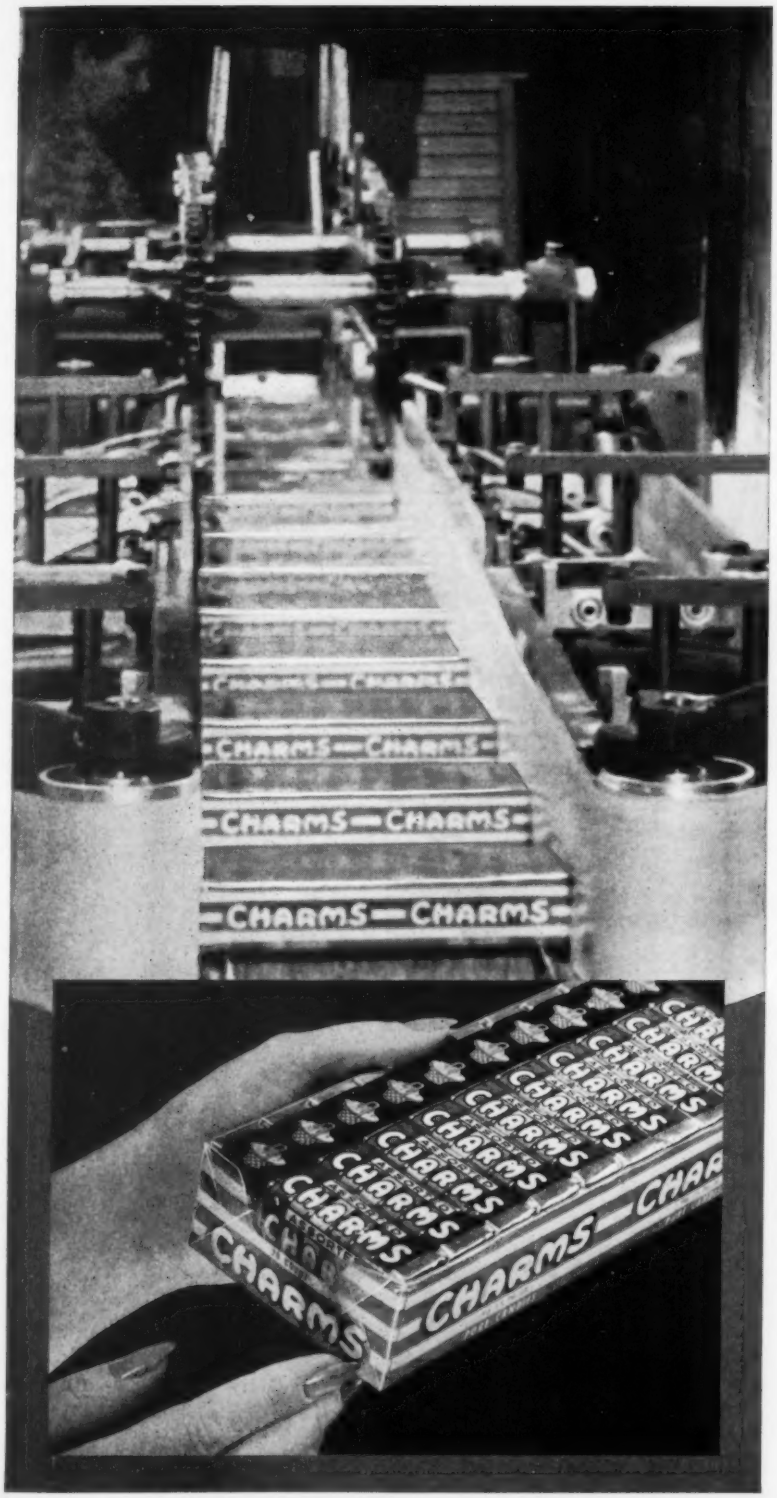


A clear, tough polyethylene film overwrap enables 20-count "Charms" candy packs to reach their destination undamaged. Result—no more complaints from dealers and distributors about wrapper breakage in transit. The packs are wrapped at speeds of 70 to 80 per minute on a Package Machinery Company FA machine.

CHARMS now overwraps in polyethylene

Already widely used for multiple-item packaging, polyethylene film recently crossed a new frontier—automatic overwrapping of cardboard tray packs.

Switching from conventional film, which often aged and tore before opening, Charms Company—"World's largest manufacturer of pure sugar hard candy"—now overwraps its 20-pack units in polyethylene film. The highly successful job is done on Package Machinery Company's Model FA machine.

A "Charms" spokesman sums it up: "Polyethylene film gives our tray packs longer shelf life; it has greater strength . . . costs less."

For distributors and retailers, this packaging breakthrough means that "Charms" candy trays stay wrapped until hand-opened. Breakage and splitting from shipping and handling are virtually ended, even during cold, dry weather.

Remember that sparkling clear, durable, soft-to-touch, polyethylene film costs less than any other transparent film. Coupled with modern, high-speed automatic overwrapping machines, this means new sales, more profit for you.

Investigate the advantages of overwrapping with film of BAKELITE polyethylene. Contact your packaging supplier, or write us for a list of leading makers of automatic polyethylene overwrap machinery. Dept. KC-101G, Union Carbide Plastics Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, N.Y. *In Canada:* Union Carbide Canada Limited, Toronto 12.

UNION CARBIDE

BAKELITE and UNION CARBIDE are registered trade marks of Union Carbide Corporation.

to 643,942 from 523,945 in 1959, a rise of 23 per cent.

However, the post-mix cup soft drink vending machines jumped from 4,437 in 1959 to 13,285 in 1960, a 300 per cent boost in one year. In the confections and food machine category, the number of machines jumped from 210,244 in 1959 to 247,682 in 1960.

Latest reports from GLASS CONTAINER MANUFACTURERS INSTITUTE INC. indicate that in 1960 shipments of new glass containers reached an all-time high—a 3.1 per cent boost above the 1959 total. However, shipments of nonreturnable bottles for beer and soft drinks in 1960 jumped 36.1 per cent above such shipments in 1959.

Note from the government:

On June 1, COMMODITY STANDARDS DIV. of the U. S. Department of Commerce sent out Recommended Commercial Standard TS-5534 for polyethylene sheeting for construction, industrial, and agricultural applications. First proposed by The Society of the Plastics Industry Inc., this standard was developed in cooperation with resin producers, extruders, convertors, and users. It has now been adjusted in accordance with suggestions from the field.

The Department of Commerce is now seeking the approval of "a satisfactory majority of production or consumption." Publication of the standard will follow its endorsement and acceptance.

Readers wishing to be among the official "acceptors" or wanting more information about this standard should write H. A. Bonnet, Commodity Standards Div., Office of Technical Services, U. S. Department of Commerce, Washington 25, D.C.

Dollars and cents:

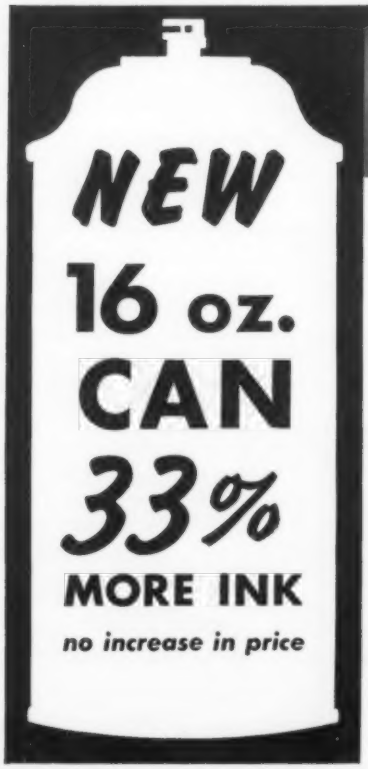
For the six months ended April 30, HOERNER BOXES, INC. reports sales of $14,077,387, compared with $14,412,412 for the same six month period last year. For the same period, income totaled $512,925 in 1961, $589,252 in 1960.

"The cost of bringing new installations into operation . . . was the major reason" for a 45-per-cent decline in WEST VIRGINIA PULP AND PAPER CO.'s *earnings for the six months ended April 30, 1961. Earnings for the period were $3,293,000, as compared with $6,011,000 for the same 1960 period. Sales for the 1961 period were $121,669,000, more than $1 million over the volume of $120,586,000 recorded in the first half of 1960.*

PITNEY-BOWES, INC. reports a 15-per-cent increase in first quarter earnings—from $1,216,266 for 1960's first quarter to $1,403,130 for 1961. Gross income for the first quarter was $17,648,139, a 10½-per-cent increase from 1960's $15,989,237.

For the first quarter of 1961 MINNESOTA MINNING AND MANUFACTURING CO. reports sales of $139,680,358 and earnings of $16,489,082. For the same period of 1960, sales were $128,669,218 and earnings $16,217,911.

(Continued on Page 18)



Proven Best for Stenciling Corrugated Cartons, Boxes, and All Other Shipping Containers.

Fast, Easy Stenciling on Steel, Wood, Paper, Fiber, Plastic, Stone, Glass and other Surfaces.

FAST • EASY • CLEAN

STENCILING

with REYNOLDS Instant Dry STENCIL INKS

• Unsurpassed for stenciling corrugated cartons, metal, paper, concrete, or other surfaces. Easy to hold aerosol container sprays a dense, compact cone of specially formulated waterproof ink. Very opaque. Dries instantly. 9 colors.

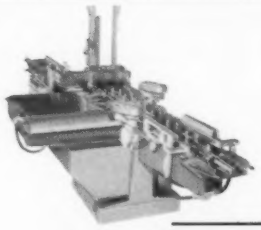
Get full details about Reynolds Stencil Inks; Stencil-Kover and other Specialty Products.

WRITE FOR BULLETIN NO. 601 TODAY.

REYNOLDS INK, Inc.

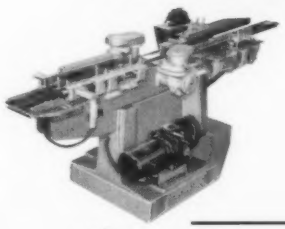
2078 East 65th Street • Cleveland 3, Ohio

Now you can choose from 3 FMC Carton Handling Machines—to reduce high-cost hand operations and benefit from greater cartoning automation



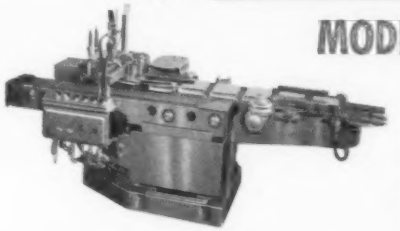
MODEL HU

The complete, portable, high-speed cartoner: automatically sets up, fills and closes end-open lock-type cartons, up to 350 cpm. For products such as prepared frozen dinners, entrees, individual 5" and 8" pies, and fruit tarts.



MODEL HCU

This is a carton closing unit only, equipped with FMC patented zipper plows for most efficient closing and locking of filled, lock-type cartons. Speeds to 60 cpm with two operators on such products as meat and fruit pies, entrees, bakery goods and foodstuffs in boilable pouches.



MODEL HU-HL

Provides automatic carton set-up, positions cartons for hand loading, closes and locks lock-type cartons. A smooth, continuous operation at speeds up to 60 cpm with one operator hand loading. Ideal to add a high degree of automation to existing lines packaging such products as pies, cakes, pizzas, prepared dinners and entrees.

WHATEVER your particular requirement, from a completely automated line to a closing operation only, you'll find a host of advantages in these FMC portable, high-speed machines. All models are constructed of gleaming stainless steel, aluminum and other rust-resisting materials, making them easy to clean and absolutely sanitary. Other important features include construction to NEMA 4 Electrical Code, variable speed drive, positive carton control, wide range of adjustability, positive zipper plow closing, anti-jam switches and famous FMC "No-Product, No-Carton" device (HU only). Savings through automation begins with FMC cartoning machinery. Write for full information, or call your nearest FMC representative.

Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION

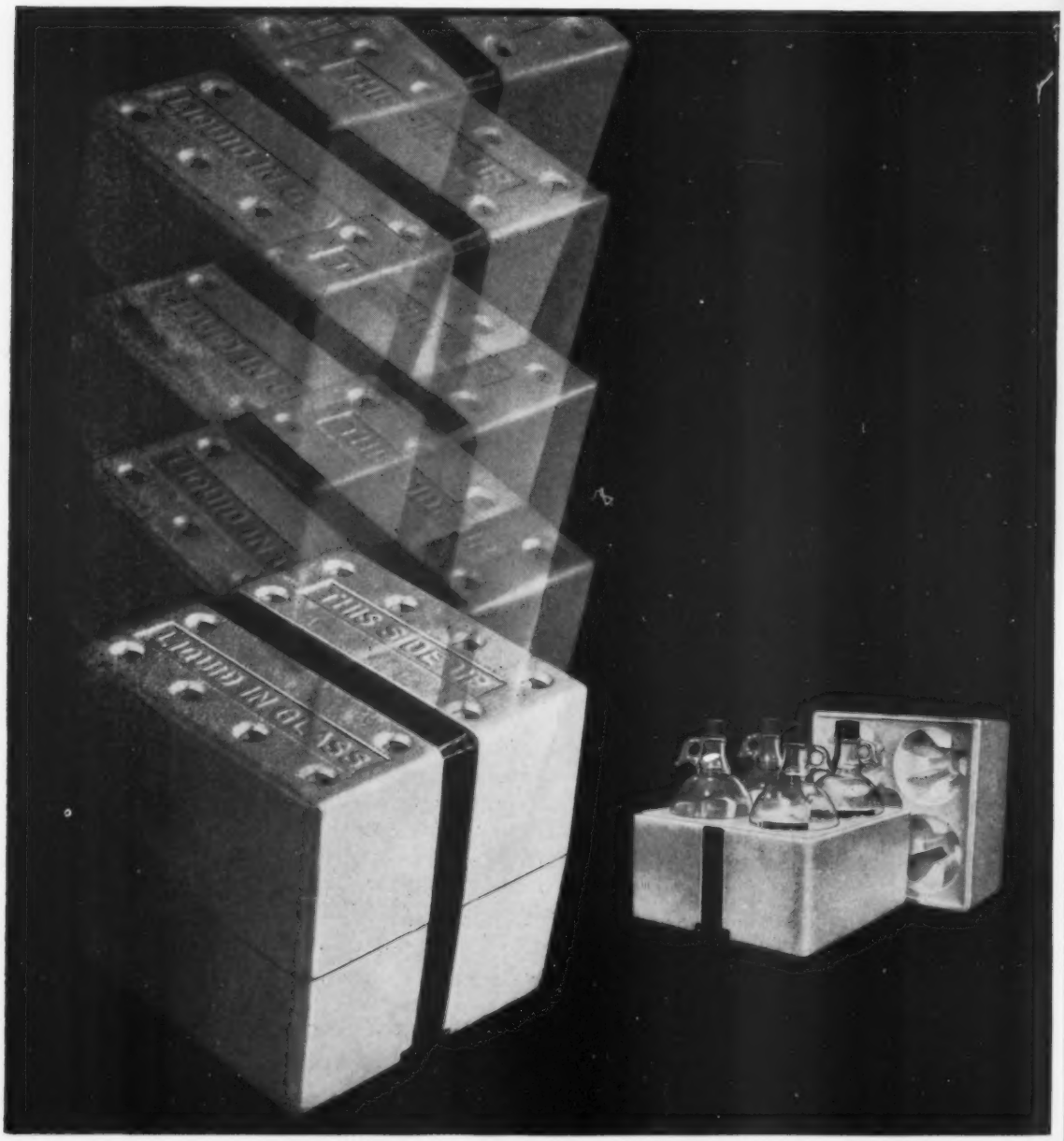
Canning Machinery Division

General Sales Offices:

WESTERN: SAN JOSE, CALIF. • EASTERN: HOOPESTON, ILL.

They couldn't break these acid bottles

These acid bottles were undamaged after a staggering ICC drop test: 16 falls from four feet. Secret is the 1¼ pound molded foam plastic case made from rigid, weather-resistant, chemical-resistant, shock-resistant DYLITE® expandable polystyrene. Developed by Allied Chemical's General Chemical Division, the case is used for its Baker & Adamson reagent acids. It has molded-in finger grips and interlocking top and bottom stacking grooves. More and more manufacturers are turning to DYLITE packaging because of its ultra-light weight, excellent cushioning and the ease with which it can be molded into intricate shapes at low cost. Since DYLITE can be colored or decorated in many attractive ways, it can make a package that's also a good-looking point-of-purchase display.

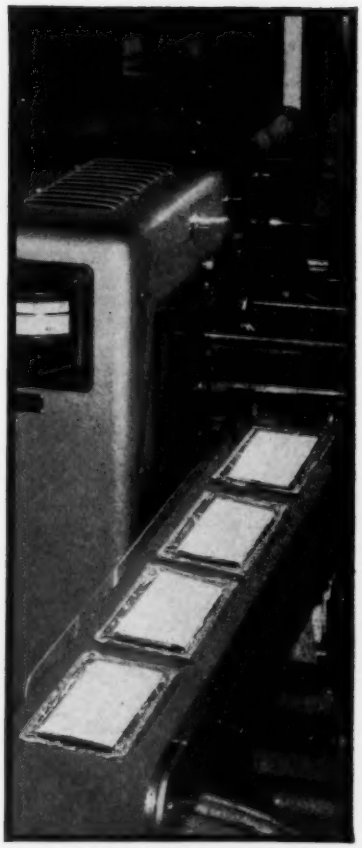


Plastic watch case looks like leather

This Wyler watch case is hard to distinguish from one made of leather, yet it's molded from tough, less expensive hi-impact DYLENE® polystyrene. It opens and snaps shut without chipping or troublesome cracking around the hinge. The deep red case is molded to a pebble finish and heat stamped with metallic gold trim. Box designed, molded and manufactured by Custom Manufacturing Company, Jersey City, New Jersey.

Push-button age needs plastics

Today's housewife spends a lot of time pushing buttons. The obliging Valve Corporation of America supplies her with aerosol actuators and caps molded of SUPER DYLAN® high-density polyethylene. They (1) cost less than metal, (2) easier to assemble, (3) have a smooth, glossy, rust and stain-resistant finish that can't chip or dent. Avon, Revlon, Coty, Lanvin, Fuller Brush, Stanley Home Products and Simoniz are just a few users.



Put $170.00 in your pocket

High-speed packaging machines now make it possible for you to save real money—as much as $170.00 on each 1,000 pounds of the crisp, clear film you may now be using—and still have a better package! How? Use film made from SUPER DYLAN® high-density polyethylene and take advantage of its unidirectional, straight-line tear, low permeability and clarity. Furthermore, it is unaffected by extremes in temperature and humidity.

KOPPERS PLASTICS

For complete information about Koppers family of fine plastics for packaging, write Koppers Company, Inc., Plastics Division, Dept. 1533, Pittsburgh 19, Pa.

KOPPERS®

WRAPPING MACHINES

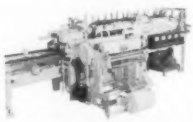
9

ONE OF THESE

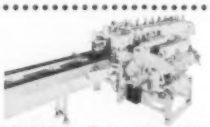
Battle Creek model 475's will soft film overwrap your thin, rectangular or irregularly shaped products at high speed

Model for 475 General Rectangular Applications

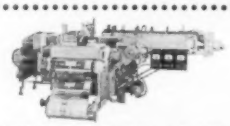
Model 475-H for Soft Irregular Products



Model 475-SN for Square Soft Items



Model 475-S for Thin or Thick Items

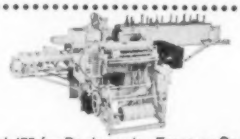


Model 475-TS for Soft Rounded Shapes

Model 475-TT for Irregular Products

Model 475-N for Paper Napkin Overwrapping

Model 475-T for Textile Products



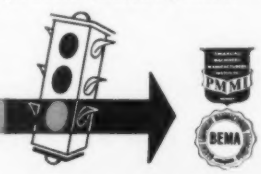
Model 475 for Rectangular Trays or Cartons

products like these can be beautifully packaged at speeds up to 75 per minute

These newly developed machines have been thoroughly field tested in more than 100 installations. All machines create attractive, weld-sealed packages in polyethylene and most of the currently available plastic films besides being adaptable to films of the future. Our engineering service will help you choose from nine different Model 475's the machine best suited to your particular packaging needs. Send your inquiry in today.

Continuous Flow PACKAGING

BATTLE CREEK *packaging machines, inc.*, BATTLE CREEK, MICH.



KVP IMPACT!® OVERWRAPS

MAKE THEM WANT TO BAKE

Arouse appetites...stimulate impulse purchases with colorful, flavor-appealing pictures...the kind of pictures you get on KVP IMPACT!

KVP IMPACT! overwraps have set a selling standard for many important types of food products, including those in the toughly competitive prepared mix field. Where mouth-watering appetite appeal is a *must*, KVP IMPACT! features the functional characteristics necessary for superior print quality: surface levelness, ink receptivity, whiteness, opacity and sheen. KVP IMPACT! assures easy running performance during machine packaging.

Illustrated below are customers' own designs reproduced on KVP IMPACT! Your designs can be colorfully reproduced, too. If you prefer, you can use the creative talents of our own award-winning art staff to produce handsome buy-appeal designs for your product.

This medium-priced, luxury overwrap may be the answer to your present packaging project. Why don't you investigate? For additional information and samples, simply write to Dept. CM-1.

Whatever your packaging needs may be—cartons, overwraps, or innerwraps—we welcome the opportunity to serve you.

...the paper people

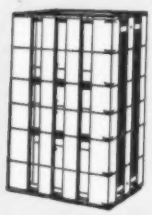
KVP SUTHERLAND PAPER COMPANY.....Kalamazoo, Michigan

what do you mean **"WIREBOUND"?**

The toughest, hardest-working, always-on-the-job container, that's what we mean. SUPERSTRONG WIREBOUND, of course. On the go everywhere. Protecting all kinds of products. A veritable bulldog for every packing and shipping requirement. Your call will bring a Superstrong Wirebound engineer with all the details.

SHIPPING SUPERSTRONG® CONTAINERS

WIREBOUND BOXES & CRATES



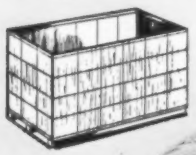
SUPERSTRONG WIREBOUND PALLET BOXES for economical, long-lasting, lightweight materials handling and storage.

WIREBOUND BOX DIVISION

St.Regis PAPER COMPANY

P. O. Box 4433
Chicago 80, Illinois

REPRESENTATIVES IN ALL PRINCIPAL INDUSTRIAL AREAS



First quarter sales at CELANESE CORP. OF AMERICA *amounted to $62,034,032 and net income was $3,560,290. For the same 1960 period, sales were $66,712,023 and income, $4,847,728.*

Consolidated sales of BEMIS BRO. BAG CO. and its subsidiaries for the three months ended March 31, 1961 were $33,471,347, as compared with $32,419,792 for the 1960 first quarter. Net income was $748,603, as compared with $724,749 for the 1960 period.

More expansion for packaging:

NOPCO CHEMICAL CO. has acquired six Midwest foam companies from the D & W CLARK CORP. for 30,000 shares of Nopco common stock. The six Clark companies fabricate and distribute urethane foam, foam rubber, and vinyl sheeting.

OWENS-ILLINOIS GLASS CO.'s *forest products group has opened its new research and testing laboratory in Toledo, Ohio. The laboratory's aim is the improvement of paper products—"from tree to corrugated and solid fibre shipping boxes and multiwall bags to . . . market."*

A. G. BARDES CO., INC.'s new 20,000-sq.-ft. plant in Milwaukee is now open for the manufacture of plastic containers and vacuum-formed packages.

As of July 1 FOOD MACHINERY AND CHEMICAL CORP. became known as FMC CORP.

NATIONAL STARCH AND CHEMICAL CORP. *has purchased* KLEEN-STIK PRODUCTS, INC. *Kleen-Stick will operate as a subsidiary corporation, and its present management will continue to direct all operations of the recently purchased company.*

LERMER PLASTICS INC. has added a new division to manufacture flexible acetate containers.

KNOX GLASS, INC.'s new plant at Atlanta, Ga. is now open. The plant includes two glass melting furnaces with a daily capacity of over 200 tons.

At new facilities in St. Louis and San Jose, Calif., OWENS-ILLINOIS

Libby LOOKS TO LYNCH ROBO-WRAP ... FOR 75 FROZEN VEGETABLE BAGS PER MINUTE

At Libby, McNeill & Libby's Grandview, Washington plant, a Model 211-V Lynch Robo-Wrap has been forming, filling (with special slide gate self-cleaning volumetric feeders designed for frozen foods by Lynch) and sealing 2¼ mil low-density, 1½ lb. charge poly bags at a speed of 60 per minute . . . 16 to 24 hours a day . . . 5 days a week . . . for 1½ years.

But . . . Speed will be increased to 75 bags per minute when modification of sealing dies is completed. Robo-Wrap's exclusive hand-over-hand action makes these speeds possible.

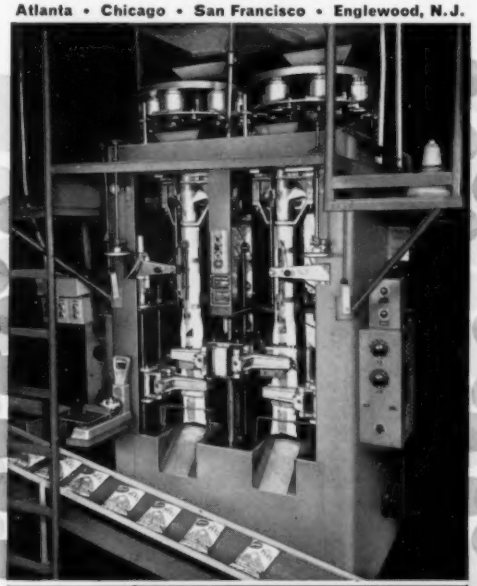
Lynch engineers ask that you consider this: when you *begin* with Robo-Wrap's basic excellence and versatility—you extend the earning life of your investment, protect against obsolescence, *and get increased production at the same time.*

Whether you package liquids, powders, solids or granules . . . in poly, cello, PVA, plastic or laminate pillow packs . . . look to Lynch for automated systems that cut costs *all along the line.*

LEADERS LOOK TO LYNCH...

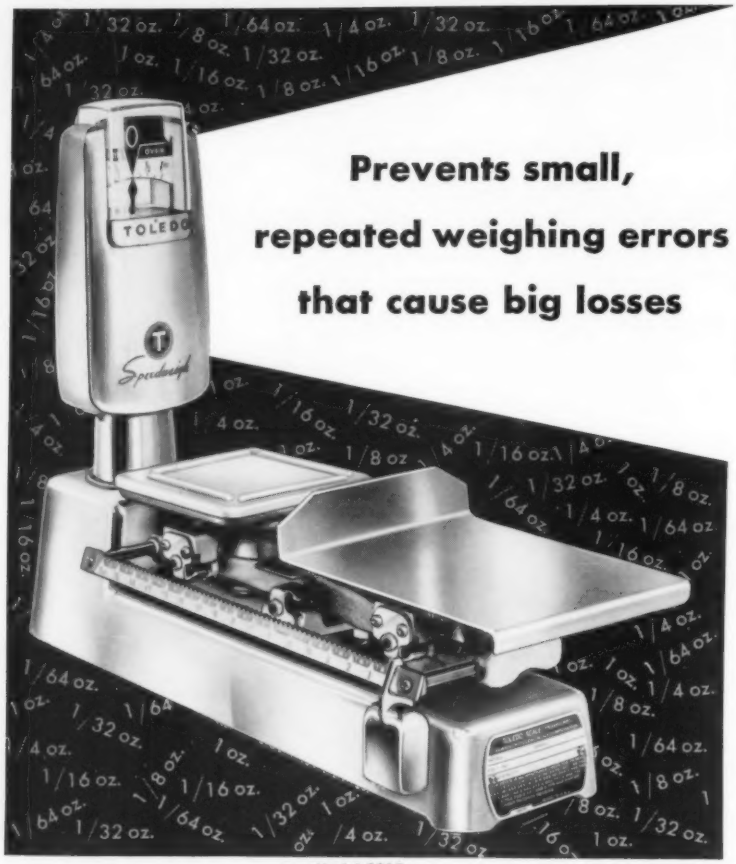
for machines that package almost everything.

Atlanta • Chicago • San Francisco • Englewood, N.J.



LYNCH CORPORATION

Anderson, Indiana, U.S.A.



Model 3012

NEW TOLEDO SPEEDWEIGH®

For Checkweighing, Filling, Counting-by-weight

If there is *any* chance that your profits are being drained off by small, repeated errors in weighing items to 5 lbs., here's the solution. Police your weights with the new Toledo Speedweigh Model 3012. • Sensitive to 1/64 oz. Available with side, end or 45° indication, Model 3012 will do away with costly errors in checkweighing, filling, weight-counting and weighing to predetermined quantities. • The flush indicator and clear plastic cover on tower give you crisp, accurate readings without parallax errors. Indicator travel is regularly one inch per oz. and chart is readable from either side. What's more, compact, rigid construction makes Model 3012 a natural for crowded production lines . . . allows it to be moved about to fill on-the-spot weighing needs without releveling in normal use. Corrosion-resistant materials used throughout for long-life accuracy and reliability. SEND for Bulletin 2112 today.

SPEEDWEIGH MODEL 3012 OFFERS OUTSTANDING ADVANTAGES

Versatile . . . indicator tower in your choice of facing directions (end, side or 45°). Wide selection of commodity equipment. Double beams available.

Sensitive . . . to 1/64 oz. Maximum platter drop of 1/16" under full load for high speed indication.

Heavy-Duty Construction . . . All parts highly resistant to corrosion, chipping and rust. Low center of gravity. Choice of attractive finishes. Movable without releveling.

SERVICE Factory-Trained 240 Cities

TOLEDO® *Headquarters for Weighing Systems*

TOLEDO SCALE, Toledo 12, Ohio

Division of Toledo Scale Corporation

(Toledo Scale Co. of Canada Ltd., Windsor, Ontario)

Glass Co. *will begin producing blown plastic bottles. O-I also plans a new glass container plant near Tracy, Calif. to be completed early in 1962.*

The plastics division of Hydrocarbon Chemicals Inc. recently dedicated its 23,000-sq.-ft. plastic container plant at Los Angeles.

Strip packaging facilities for tablets and capsules are now available at Nysco Laboratories, Inc.

Chase Bag Co. *now has an independent sales office in Denver with William L. Yearsley as sales manager.*

A second line for assembling 6-oz. aluminum cans for frozen juice concentrates is in production at Minute Maid Co.'s processing and packing plant in Auburndale, Fla. With this second line, Minute Maid can produce about 160 million cans annually.

In order to stock West Coast packagers with its steel pails, Central Can Co. has established two new warehouses in California.

Tennessee River Pulp and Paper Co.*'s $41 million kraft liner board mill at Counce, Tenn. is now complete.* Packaging Corp. of America, *which owns 52 per cent of Tennessee River Pulp and Paper, will get 52 per cent of the new mill's output.*

Drug Package Inc.'s new plant and office near O'Fallon, Mo. will soon be completed.

One glass melting furnace is now in operation at Brockway Glass Co.'s new plant at Rosemount, Minn. A second furnace will be constructed and equipped next year.

Weber Plastics Inc.*'s new 5,000-sq.-ft. warehouse in Stevens Point, Wis. is now complete.*

What people are doing:

E. L. Holloway is now product manager, cartons, for the forest products operations of the packaging division, Olin Mathieson Chemical Corp. Mr. Holloway joined Olin in 1951.

Robert S. Breckenridge has joined Standard Packaging Corp.

(Turn page)

For more information circle No. 216 on Reader Service Card

Circle No. 217 on Card ►

How Lord Baltimore helps package 62,000 fish sticks every hour

LORD BALTIMORE's packaging service extends beyond the creation of high-quality, printed cartons for Gorton's of Gloucester. Here is how our experts increased production efficiency for this volume processor of sea foods.

To meet rising demand, Gorton's looked for a more efficient way to sort and package fish sticks. The installation of our Dex-O-Pak* system was the answer. It unscrambles the product and completes the entire packaging cycle in less than *3 minutes.*

We offer high-speed packaging systems and cartons for any volume product. Our nationwide engineering program includes installation, regular servicing, operational training and maintenance.

Lord Baltimore's packaging service can increase your production efficiency. For information, write: 425 Park Ave., N. Y. 22, N. Y.; San Mateo, Calif. or 333 N. Michigan Avenue, Chicago, Ill. *T.M.

Lord Baltimore Press

PLANTS: BALTIMORE, MARYLAND • CLINTON, IOWA • SAN LEANDRO, CALIFORNIA

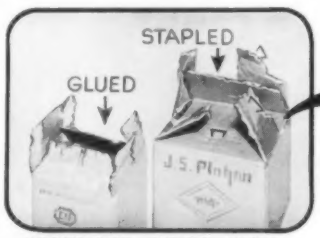
AFFILIATED PLANTS: MEXICO CITY: ENVASES AZTLAN • SAN JUAN: PUERTO RICO PACKAGING COMPANY LIMITED

DO YOU KNOW

that "out of this world" customer convenience in opening your corrugated shipping containers, without injury to persons, contents or containers, is now an engineered achievement. This is only accomplished when containers are automatically tape-sealed with new improved "peelable" gum tape, WITH visibly extending LIFT TABS at EACH END of the tape, as applied by

GENERAL'S

CASE—TAPE—SEALERS



DAMN IT! THIS IS TERRIBLE!

DESTROYS GOOD WILL

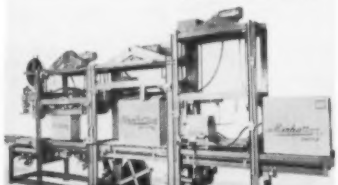
Product manufacturers who close shipping containers with glue or staples are handicapped by old fashioned crude methods and overlook customer dissatisfaction in the struggle to "unpackage" their products. This usually causes: product damage; cut hands; ripped clothes; broken fingernails; a torn box, spoiled for re-use; serious customer aggravation or even a suit for damages. Nobody gains.

OH BOY! THIS IS TERRIFIC!

BUILDS GOOD WILL

The practical and economical way to avoid all these difficulties, plus gaining a more dust-proof and pilfer-proof seal, is to seal with the new "PEELABLE" TAPES having visibly extended, convenient LIFT TABS (Pat. Pend.) at BOTH ENDS. Everybody gains.

FOR MIXED SIZES



"GENERAL'S" FULLY AUTOMATIC Tape-case-sealers simply have no equal for production runs of mixed or fixed sizes. A marvel in tape sealing automation.

FOR MIXED SIZES

Also **"GENERAL'S" NEW, LOW COST SEMI-AUTOMATIC** Tape Sealer for fixed and/or mixed sizes is a step toward lower costs and better case sealing — Price $995.00.

It costs to put off . . . Phone or write now . . .

GENERAL CORRUGATED MACHINERY COMPANY, INC.

PALISADES PARK, N. J. • Windsor 4-0644 • TWX-LEON 1491-U • CABLE: GENCO

as assistant to the vice president of the packaging group. Previously he was general manager of KVP Sutherland Paper Co.'s converting plant at Albany, Ga.

Five management changes at Diamond National Corp.'s molded packaging division are: ERIC G. ERICKSON, *general sales manager of disposable plates;* GEORGE S. WOLF, *divisional vice president and general sales manager for egg packaging;* JOHN J. PENN, director *of manufacturing; and* JAMES L. HORTON, *manager of the Red Bluff, Calif. plant.*

C. D. BURNS, who was formerly technical representative of Arabol Adhesives for the Southern area, has joined Adhesive Products Corp. as Southern sales manager.

BENJAMIN C. RENNE is now district manager, Philadelphia, for Crown Cork & Seal Co.

JAMES H. PRICE, *a civil engineer with Owens-Illinois Glass Co. for more than 15 years, is manager of a new O-I glass container plant now being constructed at Brockport, N.Y.*

Illinois Tool Works has named WILLIAM E. WILKINSON area sales manager for the vending cup, packaging and dairy container products of its Conex Div.

DANIEL A. LLEWELLYN is the new manager of National Can Corp.'s manufacturing plant at Marion, Ohio. Previously he was assistant manager at the Cleveland plant.

WILLIAM C. MERTZ, senior *research chemist for the past three years, is now director of poylolefin film development for The Dobeckmun Co.*

Morningstar-Paisley, Inc.'s board of directors elected DAVID BOOKSHESTER vice president of adhesives sales. Formerly he was sales manager of the adhesives division.

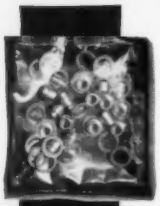
SIMON POSEN, who joined Gilman Paper Co. in 1949 as director of the New York technical department, is now vice president in charge of special assignments.

GORDON VON DOERSTEN *will head R. C. Can Co.'s new district sales office in New York City.* (End)

For answers on perplexing package-cushioning problems, get this data-packed B.F.Goodrich booklet. Filled with information on what to look for in cushioning materials . . . explains how to select and design package cushioning to reduce damage from shock, vibration. Send request on your company letterhead. The B.F.Goodrich Company, 188 Derby Place, Shelton, Connecticut.

PACKAGE CUSHIONING BY B.F.Goodrich

You can cut material costs on packages like these...



New Sundstrand Model 50-A Packmaster has pusher-feeder that permits use of lighter heat-sealable foils, films, or paper

With the all new Packmaster, the feeder pushes the product into the formed pouch of packaging material. This eliminates tearing or piercing . . . often permits use of lighter, less expensive packaging materials.

Packages ranging from 2″ to 8″ wide and 2″ to 16″ long are produced by the Packmaster at production rates up to 150 per minute. They may be transparent or opaque both sides or transparent one side, opaque the other. The completely airtight packages provide ideal protection for an unlimited variety of both hard and soft goods.

Automatic hopper feeders can be provided to insure accurate counting and faster loading of small parts into individual packages or kits.

Write for new 50-A Bulletin today. For complete recommendations, describe your requirements and submit samples.

MARK OF SUNDSTRAND RELY-ABILITY

SUNDSTRAND-AMERICAN BROACH

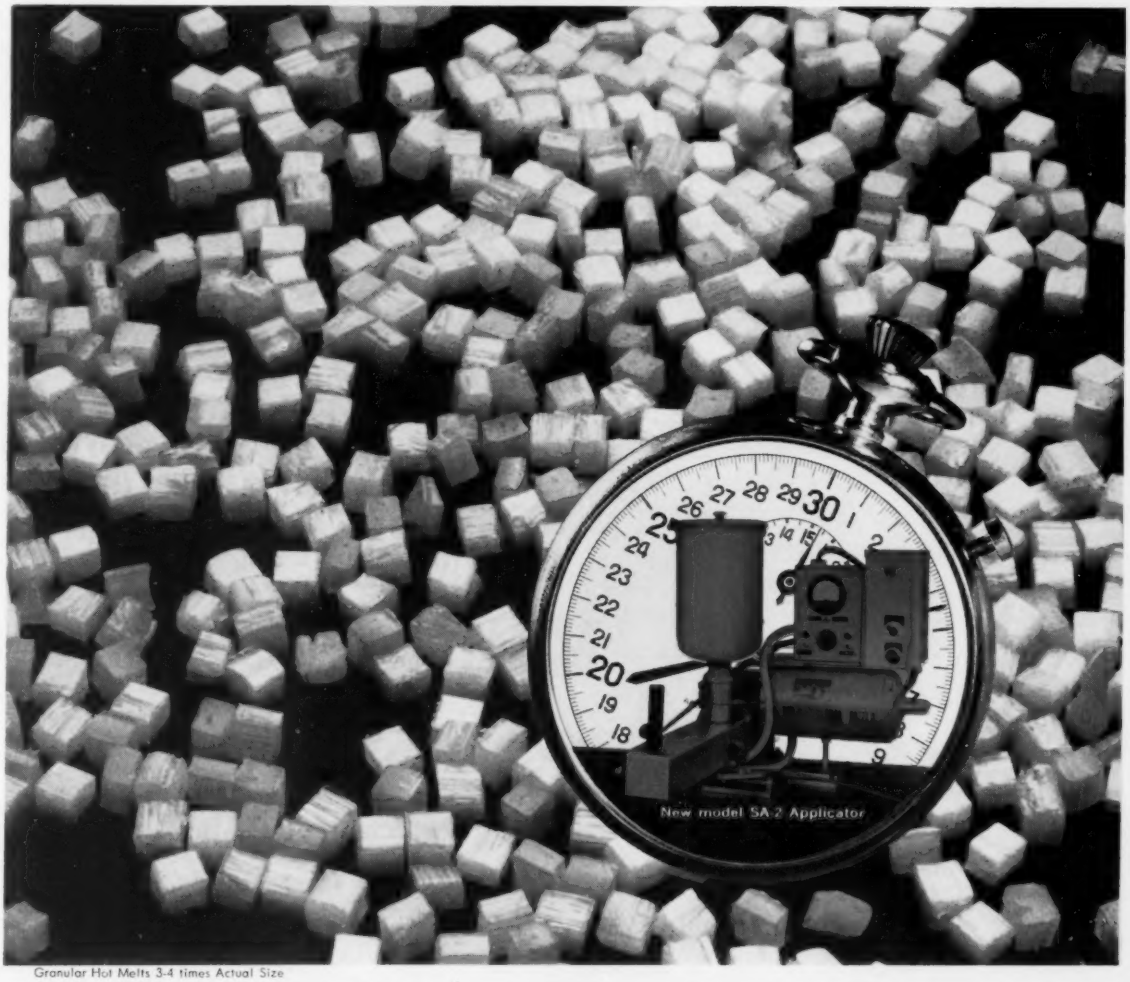
ANN ARBOR, MICHIGAN

Division of SUNDSTRAND CORPORATION

AUTOMATIC HOPPER FEEDERS can be added to provide accurate counting and faster loading of nuts, bolts, screws, washers, etc., in individual packages or kits.

INSTANT-LOK SYSTEM

GRANULAR HOT MELTS AND APPLICATORS



Granular Hot Melts 3-4 times Actual Size

BONDS TOUGH SURFACES—INSTANTLY

Hot, fluid adhesive—extruded in a thin line. Provides instant bonding for: polyethylene, wax paper, foil, wet strength kraft, Saran. It's National's unique, successful INSTANT-LOK SYSTEM of granular hot melts and applicators.

INSTANT-LOK granular hot melts are 100% solids resin adhesive. The lowest cost form of adhesive. No water. No preparation. A range of formulations give high bonding strength, heat and oil resistance, and other desirable properties.

INSTANT-LOK applicators are available with straight-line or intermittent applicator heads. Straight-line for bag seaming, tube winding and other converting operations. Intermittent for carton forming and sealing. Available exclusively through National.

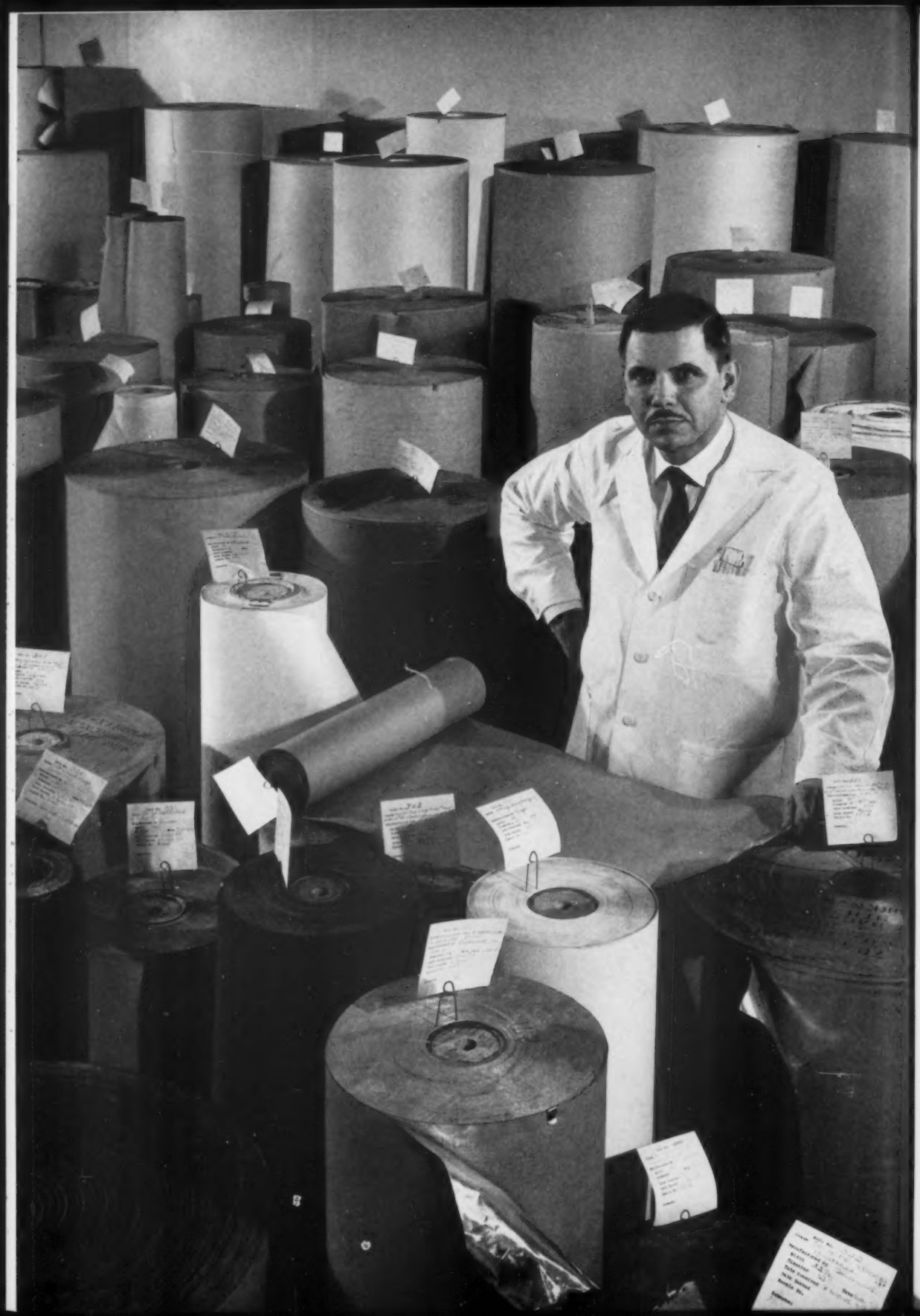
INSTANT-LOK adhesives and applicators are adaptable to machines you are now using or may be specified on new machines. Full details are available in our newest folder. For your copy, write or call your nearest National office.

National ADHESIVES

NATIONAL STARCH and CHEMICAL CORPORATION

750 Third Avenue, New York 17 • 3641 So. Washtenaw Avenue, Chicago 32 • 735 Battery Street, San Francisco 11

And All Principal Cities in the United States, Canada, England and Mexico



He knows all the right combinations

Using coatings and laminations, Union-Camp's Bob Harris has given corrugated boxes a host of amazing new properties.

OUR photograph shows Bob Harris standing in a forest of containerboard stock, paper and laminating materials. Here, he is comfortably at home.

He should be. Bob is a chemist, and a Project Supervisor at Union-Camp's Product Development Laboratory. Coatings and laminations are his specialty. Guesswork plays no part in his research.

"Today, thanks to coatings and laminations, there are few limitations on what you can package in corrugated," says Bob. "Using them singly or in combination, we can give corrugated boxes any number of protective properties. Water repellency, for example. Or snag and scuff resistance. Or resistance to acids and grease.

"We can coat the inside of a box so that it won't scratch the finish of an expensive hi-fi set. We can create moisture barriers for packaging soaps and other types of products.

"Everything we do is aimed at making the package more efficient by providing increased protection and reducing costly damage."

Recently, Bob and his group perfected a special *release* coating which is applied directly to the box. It prevents materials such as rubber or asphalt from sticking to the interior surface of corrugated boxes.

Bob Harris has also worked some minor miracles in improving the *printing* surface of Union-Camp containerboard. Using a special clay coating and resinous binder, an extremely smooth surface is provided that takes printing beautifully. The clean, sharp impressions that can now be achieved enhance the display value of the box and the sales appeal of its contents.

What lies ahead for corrugated combinations?

Bob and the rest of Union-Camp's development team are hard at work investigating new coatings that will result in even greater protection and economy for Union-Camp customers. This work is being carried on in a laboratory that can duplicate any shipping hazard a box is likely to meet in actual use. Its facilities include special *environmental rooms* that can simulate the heat, cold, or moisture conditions found anywhere on earth.

Find out what improvements Bob can make in *your* box. While you're about it, investigate Union-Camp's *complete* Packaging Evaluation Program available at no additional cost.

This service includes box design and development, specifications control, graphic design and merchandising counsel, box testing and in-plant surveys of your materials handling operation. An improvement in any one of these areas might produce greater efficiency and economy in your corrugated packaging operation.

A note on your letterhead will bring a prompt response. Why not write us today?

UNION-CAMP®

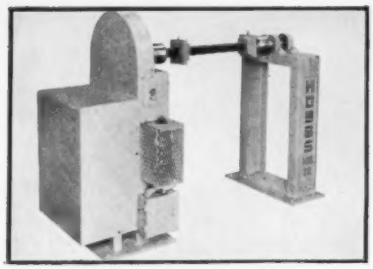
CORRUGATED BOXES

Union Bag-Camp Paper Corporation · 233 Broadway N.Y. 7, N.Y.

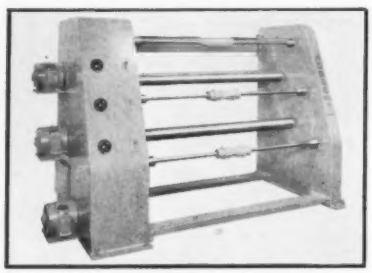
Plants:

*Dedham, Mass.; Allied Container Corp., Route 128, Allied Drive
Trenton, New Jersey; 1400 E. State St.
†Washington, Penna.; P. O. Box 285
†Cleveland, Ohio; 10200 Miles Ave.
†Sharonville, Ohio; P. O. Box 86
Chicago, Ill.; 4545 West Palmer
†Benton Harbor, Mich.; 11th St. & Britain Ave.
†Monroe, Mich.; 1109 East Elm Ave.
†Eaton Rapids, Mich.; P. O. Box 8
*Baltimore, Md.; Eastern Box Co.; Wagner's Point
Jamestown, N. C.; 3704 Point Pleasant Rd.
Spartanburg, S. C.; P. O. Box 1985
Savannah, Georgia; P. O. Box 570
Lakeland, Florida; P. O. Box 454

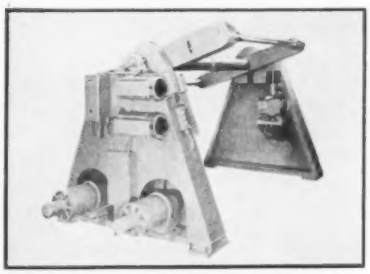
*Subsidiary Companies †River Raisin Division



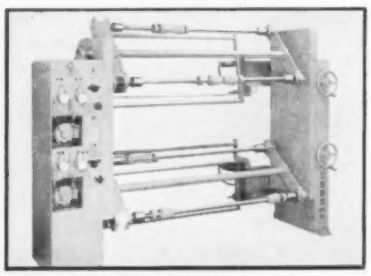
Light Duty Single Shaft Winder



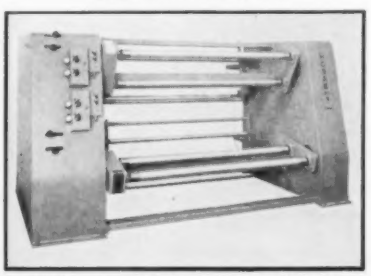
Medium Duty Staggered Three-Shaft Winder



Heavy Duty Two-Shaft Turret Winder with Power Indexing



Light Duty Duplex Winder with Dual Vers-A-Wind Drives



Medium Duty Duplex Winder with Dual Vers-A-Wind Drives and Power Indexing

Looking Ahead in Web-Winding

A TIMELY FACTUAL MESSAGE FROM

HOBBS

With the general business curve again on the upturn and with the corresponding development of immediate needs for capital equipment, Hobbs Manufacturing Company felt the following facts might prove helpful.

How Fast Can Your Company Get Quality Web Winding Machines?

The answer Hobbs has is "Very Fast!". However, Hobbs does not and will not sacrifice the principles of sound engineering of machinery for your particular need in order to short-cut delivery. Hobbs has the man-power and the system to get your quotations to you promptly and accurately wherever you are . . . and Hobbs delivers the equipment it engineers — *as engineered.*

What Makes Hobbs Your Best Source For Web Winding Machines?

The heavy concentration Hobbs places on this machinery and the depth of experience it enjoys in the design and manufacture of web winding machines for plastics, paper, rubber, textiles, etc. make it a source which should always be considered in the purchase of this equipment. Further, Hobbs offers eight basic designs of center shaft web winding machines all of which can be modified to suit your particular requirements.

More For Your Money Now Means More Than Ever

Hobbs has stated that through its superior web winding machine design and engineering it gives customers "more for the money". Now this Hobbs sales theme means more than ever when the requirement is for high quality output machines for competitive prices. Hobbs does not cut price or quality but *does deliver* MORE WEB WINDING MACHINE FOR THE MONEY.

Hobbs Is Ready To Serve You FAST with the BEST In Center Shaft Web Winding Machines.

For Instant Web Winding Quotation Service, Wire:

HOBBS MANUFACTURING COMPANY

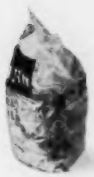
38 G Salisbury Street, Worcester 5, Mass.

EST 1882

Direct Sales Offices in Irvington, N.J., Columbus, Ohio, Chicago, Ill. and Los Angeles, Calif. Representatives in Cleveland, Ohio, Louisville, Ky., Greenville, S. C. and Toronto, Ontario, Canada.

120-1

WINDERS · HAND & POWER SHEARS · SLITTERS · AUTOMATIC CUTTERS · DIE PRESSES



"May we tear your package to pieces, please?"

We'd like to examine it very carefully and, with all due respect, tear it apart. We don't charge for this. Any redesign and recommendations we come up with are yours gratis.

We do it because it brings us business.

In the past, we've proven to manufacturers that they were using unnecessarily expensive cellophanes. That they were using the wrong cellophane for the climates they were merchandising in. That the graphic design of the package was not in keeping with the color and texture of the product. We've made packages structurally sounder and we've revealed sealing flaws. We also know that a lot of manufacturers aren't using cellophane when they should be.

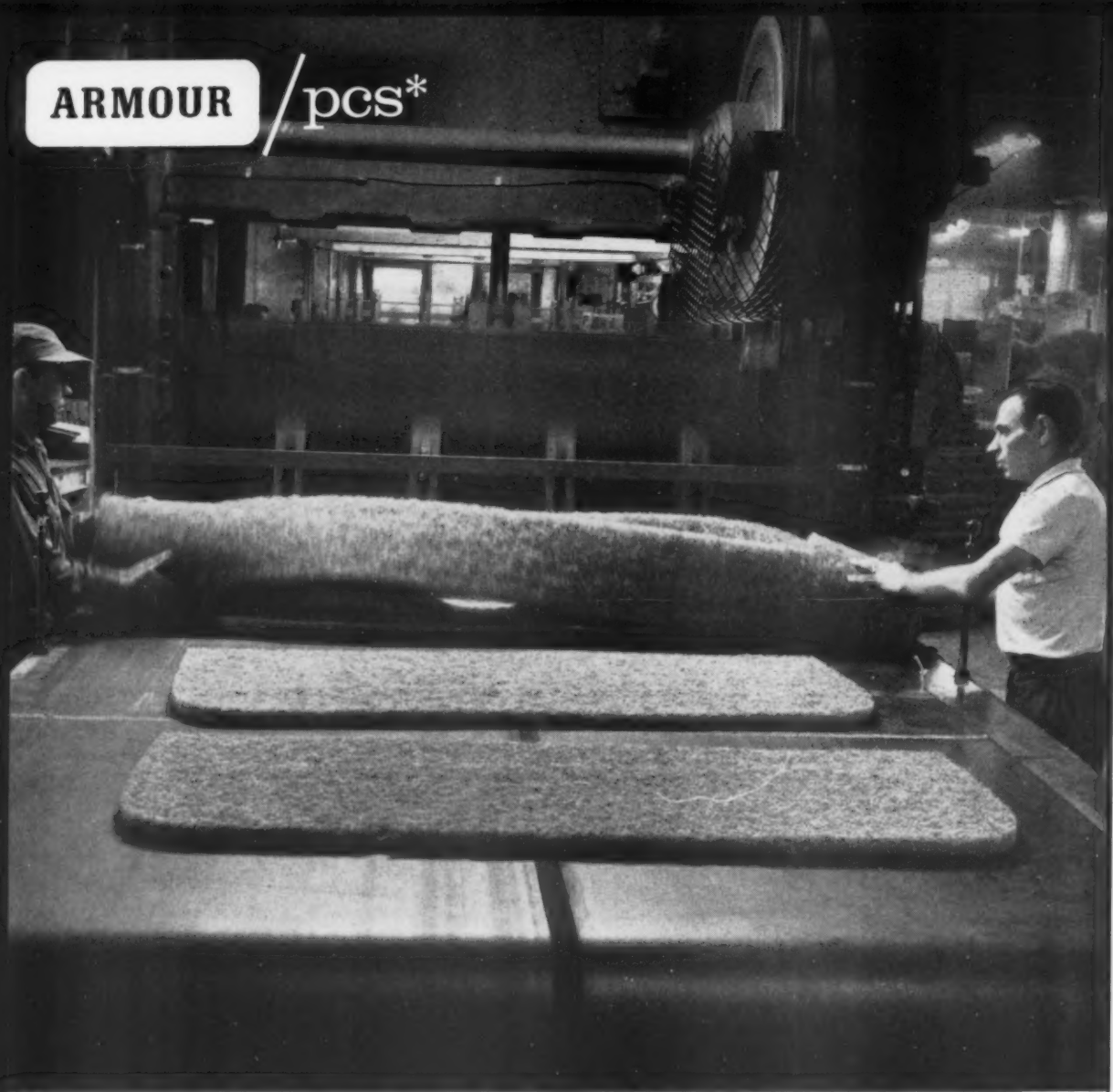
So may we have your package please?

Our staff is talented and eager, but not impetuous; they only tear packages apart when it's necessary. And they always put them back together again.

PACKAGING DIVISION Olin

Film Operations, 460 Park Avenue, New York 22, N. Y.

For more information circle No. 223 on Reader Service Card



*protective cushioning service fits your product perfectly

Special Hairflex packs can be fabricated to pillow your product.

Fabricating a protective pack in precisely the right form for your product and shipping requirements is a job for Armour/pcs. With the most modern, high speed facilities in the industry, Armour fabricates Hairflex—its rubberized curled hair cushioning material—in sheets, laminated packs, die-cuts or molded to fit the profile of your product. Expert packaging engineers from Armour/pcs are ready to assist you in the design and development of a protective pack that will cut the risk of in-transit damage. Take advantage of this comprehensive technical service. For your free copy of our brochure describing Hairflex for packaging applications, write to: Cushioning Products Division, 16123 Armour Street, N.E., Alliance, Ohio, or 2001 Saybrook Avenue, Los Angeles, California.

CUSHIONING PRODUCTS DIVISION
ARMOUR ALLIANCE INDUSTRIES

For more information circle No. 224 on Reader Service Card

After an automatic weighing and packaging requirement is properly analyzed, Triangle Production Engineering details the equipment needed. Actually, this is a rather complex business of fitting proven automatic weighing and packaging methods into the customer's existing plant operations. The goal is the simplest, most efficient machine possible—one the customer can depend on, and that Triangle can guarantee.

Would your packaging machinery let you compete with Manischewitz?

It would *if* the machine builder was able to fit proven automatic weighing and packaging methods to your needs as well as Triangle did for The B. Manischewitz Co., Newark, New Jersey.

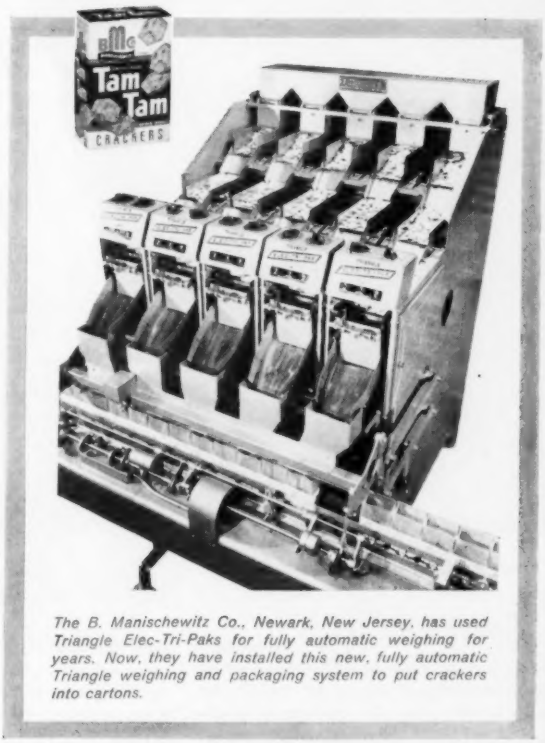
Whether you're putting crackers into cartons, or not, your packaging machinery can affect your competitive position. That's why Triangle's specialization since 1923 in automatic weighing and packaging is worthy of your consideration.

In the case of Manischewitz, the proven Triangle Elec-Tri-Pak automatic weighing system was combined with other well-established methods of packaging. Triangle Production Engineering detailed the combination so it would fit directly into Manischewitz operations. As a result, the machine was simple and efficient. Crackers went into cartons gently, and fast enough to help make Manischewitz an effective competitor.

The sensitivity of the five Elec-Tri-Paks and their new auxiliary, double-stage vibratory feed system gives Manischewitz unusual accuracy as well as speed. Yet the entire automatic weighing installation is simple and dependable—no complicated adjustments . . . just as easy to maintain as it is to clean.

Like so many other users of Triangle machines, Manischewitz already knows what we want to show you. Why not write or call for our free brochure, "A Story About People, Packaging and Profit." Request also our folder on Triangle automatic weighing. Both tell why you can depend on Triangle.

F-19-AL



The B. Manischewitz Co., Newark, New Jersey, has used Triangle Elec-Tri-Paks for fully automatic weighing for years. Now, they have installed this new, fully automatic Triangle weighing and packaging system to put crackers into cartons.

38 YEARS

. . . . . YOU REALLY SAVE WITH . . . . . .

TRIANGLE

PACKAGE MACHINERY COMPANY

6631 W. Diversey • Chicago 35, Illinois
Telephone TUxedo 9-0200

PACKAGING

SWEETS *and* / *or* SMOKES

MARATHON HAS THE ANSWER

Converting papers, paperboard, films and foil into the style, size and shape of package your product calls for takes men and machines. Marathon has both —in abundance.

Charms Candies, for example, prove that *Marathon has the answer* to converting problems. This 5-color Fiber-Seal wrapper is roto-printed on paper-backed foil, then wax-laminated to tissue and punched for mechanical indexing on the packaging machine. Add heat and the wax permeates the tissue and seals solidly.

Flip-Top Cartons present another sample of Marathon's abilities as a converter. Critical "print to cut" register demands perfect rotogravure printing on Marathon Hi-Fi paperboard. Precision die-cutting assures trouble-free operation when forming and filling packages on high-speed machinery.

When printing, coating, laminating, extruding . . . or considering any other converting operations . . . remember: *Marathon has the answer.*

General Packaging Department, Marathon, A Division of American Can Co., Menasha, Wis. In Canada: Marathon Packages Ltd., Toronto 3.

For packaging . . . and ideas . . .

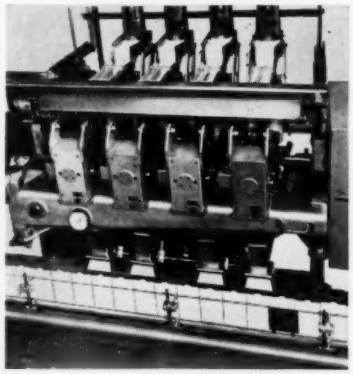
you can't beat marathon

YOU'VE GOT NOTHING TO WORRY ABOUT

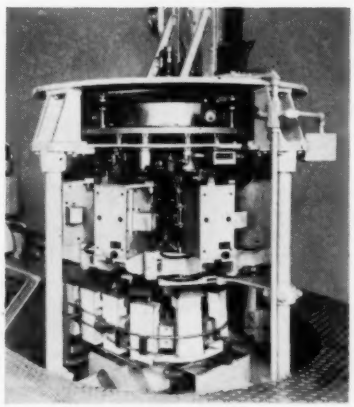
concerning stiffening regulations if you've got precision weighing like this . . .

The extent of your concern about the stepped up activity of official agencies will depend on the performance of your packaging equipment. If it cannot match the latest par for the course, it may well be time for you to consider replacing it with equipment that does.

Fortunately, such equipment is available today. Check the several Pneumatic methods of package making and filling, for both lined and unlined cartons. Sound engineering results in satisfactory packages from *everybody's* standpoint.

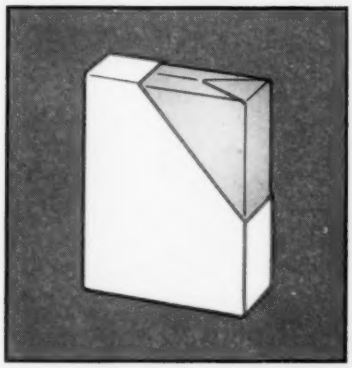


TRUE PRECISION NET WEIGHING became available for the first time when Pneumatic developed the PNEUMATRON — an instantaneous pressure method that permits endlessly repeated accuracy of the highest order — beyond the most stringent requirements. Extremely sensitive, it is self-compensating for changes in product density or rate of flow. Yet design and construction are simple and durable.



ALL-IN-ONE continuous motion machine for feeding and setting up unlined cartons, bottom sealing, filling and top closing is available in the Pneumatic Velocitron Packager. Small, medium and large models can be fitted with Pneumatron net weighing heads—to provide close accuracy at highest speeds.

One of the features of the Velocitron Packager is the Goods Level Detector. This electric eye device automatically rejects packages when the contents fail to reach . . . . or go beyond . . . . a pre-determined measure. This insures a properly filled container by volume.



No-Slack Fill — problem of slack fill with lined containers is eliminated when the inner bag and carton are formed on the Double Package Maker combination. What you get is a tightly sealed package with maximum protection for the product and space for *complete* fill.

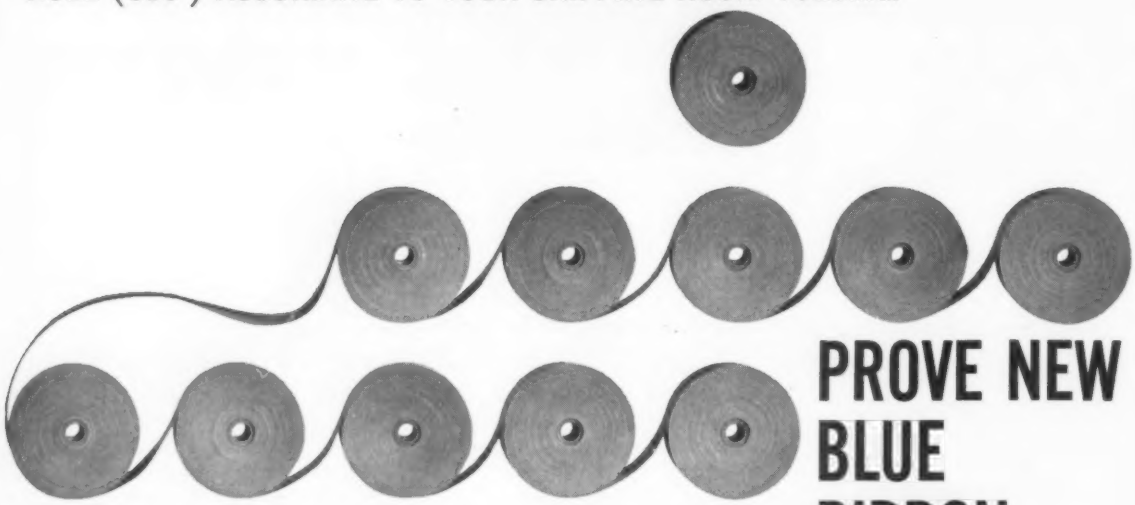
The efficiency of modern Pneumatic equipment, with its highly integrated control systems and safeties, protects you against product waste while making it possible for you to easily fill every requirement of legal fill. Only the bare facts have been presented here. The complete details on these machines are available in several comprehensive bulletins. **Bulletin No. 122 Pneumatron Weighers; Bulletin No. 133 Hi-Speed Packaging Machines; Bulletin No. 137 Fin-Seal Packager.** Write for them.

PNEUMATIC SCALE CORPORATION, LTD., 77 Newport Avenue, Quincy 71, Mass. Sales Offices: *New York; Chicago; Dallas; Rochester.* Agents: *Fred Todt Company at Los Angeles, San Francisco, and Seattle. Rockwell Pneumatic Scale Ltd., Edgware Road, London, N. W. 2, England, O. R. M. A., Paris 8, France. Carbert Manufacturing Co. Division, Cambridge, Mass., Delamere & Williams Co., Ltd., Toronto.*

PNEUMATIC

Packaging and Bottling Equipment

BLUE RIBBON WITH HIGH SPEED RENACEL-100 ADHESIVE WETS OUT FASTER, TACKS QUICKER, BONDS MORE PERMANENTLY TO CARTONS THAN ANY OTHER SUPER STANDARD TAPE EVER MADE. IT IS ODORLESS AND COLDPROOF TOO. IN YOUR PACKAGING OPERATION BLUE RIBBON CAN MEAN LOWER LABOR COSTS, INCREASED PRODUCTION, GREATER SAFETY IN TRANSIT. **BUT CLAIMS ARE NOT PROOF!** ■ HUDSON OFFERS YOU THE OPPORTUNITY TO EVALUATE BLUE RIBBON PERFORMANCE BY TESTING 6000 FEET OF TAPE OR ONE FULL ROLL (600') ACCORDING TO YOUR SHIPPING ROOM VOLUME.



PROVE NEW BLUE RIBBON

OUTPERFORMS ALL SUPER TAPES

TEST FREE 600 TO 6000

FEET ON YOUR PRODUCTION LINE

Hudson Pulp & Paper Corp. BR-P-7
477 Madison Avenue, New York 22, N. Y.

Gentlemen:
We would like to test Blue Ribbon super standard tape with new RENACEL-100 adhesive. Based on the information below supply FREE test quantity at once.

Products Packaged _____

Carton Sizes _____

Average Monthly Carton Shipments _____

Brand of Present Tape Used _____

Your Name _____ Title _____

Company _____

Address _____ City _____ State _____

BLUE RIBBON SUPER STANDARD WITH NEW RENACEL-100 ADHESIVE is a product of HUDSON PULP & PAPER CORP. . . . for over 30 years the leader in quality branded gummed sealing tape.

PROVE NEW BLUE RIBBON PERFORMANCE IS BETTER THAN THE CLAIM. WRITE FOR YOUR TEST PROGRAM SUPPLY.

HUDSON
PULP & PAPER CORP.

U. S. ARMY PHOTO

Resilo-Pak gives Davy Crockett spotting-round 100% protection to -80F

The Davy Crockett—a dramatic breakthrough in Army weaponry—gives small combat units portable nuclear firepower. Picatinny Arsenal engineers who developed the Davy Crockett have selected Armstrong Resilo-Pak to cushion and position the weapon's explosive spotting-round inside its carrying case. One of the many reasons Resilo-Pak won out over other materials tested was because it maintains its superior resilience at low temperatures—down to –80F.

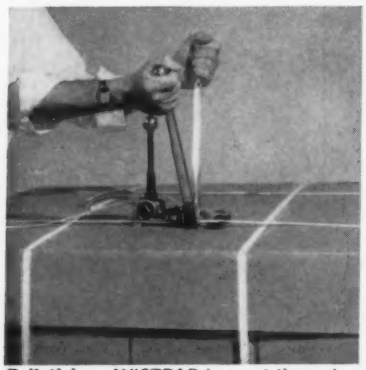
Fabricated Resilo-Pak forms a hollow to cushion the projectile's nose, and another sheet holds the shank of the projectile in place. In repeated drop tests from a height of 4 feet, this Resilo-Pak engineered package proved its ability to give the 100% protection demanded by critical military applications—even at eighty below.

Clean white Resilo-Pak is versatile. It can be fabricated by die-cutting, hot wire cutting, heat deformation, or cementing. It is odorless, non-corrosive, non-dusting, and non-abrasive. And it meets Interim Fed. Spec. PPP-C-00850 (GSA-FSS).

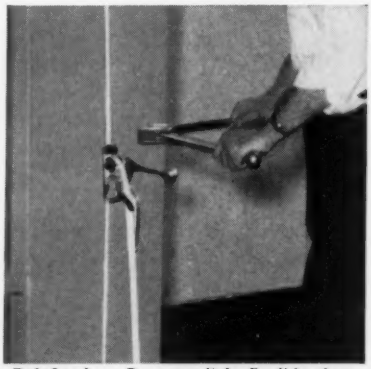
For free Resilo-Pak booklet, write Armstrong Cork Company, 3107 Pearl Street, Lancaster, Pennsylvania.

Armstrong RESILO-PAK

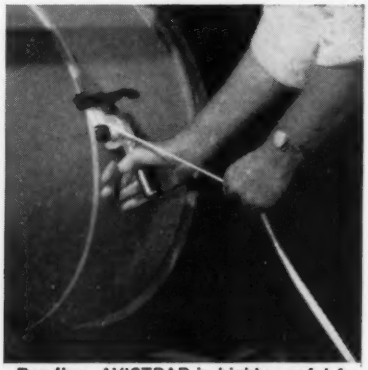
NEW IDEA AT WORK



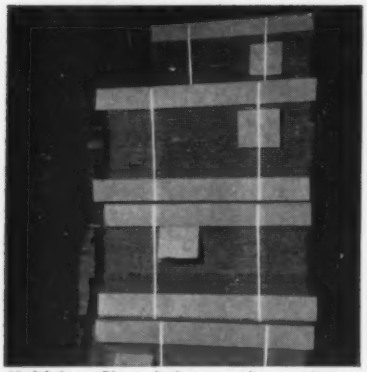
Palletizing. AVISTRAP is used throughout industry to secure products ranging from die-castings to millwork, in palletized units weighing thousands of pounds.



Reinforcing. Because it is flexible, tensions around corners with little crushing, AVISTRAP is ideal for reinforcing large cartons used in shipping bulky materials.

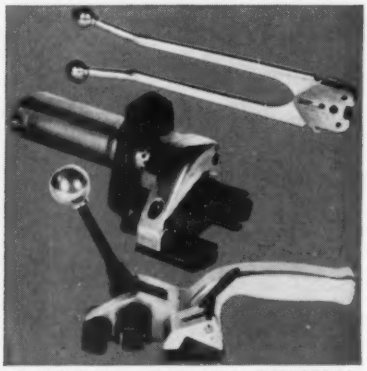


Banding. AVISTRAP is highly useful for banding because it is easy to apply, does not cut into the product and is easily removed and disposed of at destination.



Unitizing. Since it has no sharp edges, AVISTRAP has no tendency to damage merchandise such as these flat cartons. Flexibility helps make strapping easier.

Baling. Textile bale shown weighs approx. 700 lbs. AVISTRAP replaced metal in this application in over 100 mills because of ease of application and economy.



Tool Selection. A selection of AVISTRAP pneumatic and hand tools is carefully designed to fill needs of many different industrial strapping applications.

AVISTRAP® CORD STRAPPING

*Patents pending

Out-performs metal many ways. More energy is required to break AVISTRAP than equivalent-width metal strapping. AVISTRAP simply absorbs greater shock upon impact, keeps packages together long after metal strapping would have reached its breaking point. AVISTRAP will not lash out with jagged ends if broken, will not snag handlers' hands or other packages. For these reasons, in addition to light weight and easy handling, AVISTRAP is now used by the textile, paper, automotive, lumber, hardware, and many other industries. Request information or an in-plant demonstration of advantages AVISTRAP offers your industry by writing to Industrial Packaging Department, American Viscose Corporation.

AMERICAN VISCOSE CORPORATION, INDUSTRIAL PACKAGING DEPT., 1617 PENNSYLVANIA BLVD., PHILA. 3, PA.
District Offices: Atlanta, Ga. • Boston, Mass. • Charlotte, N. C. • Chicago, Ill. • Columbus, Ohio • Dallas, Tex. • Los Angeles, Calif. • New Orleans, La. • New York, N. Y.

Riegel

Creative Climate for Tomorrow's Packaging

Staff's new tissue carton: In the store it's an eye-appealing stand-out. In the home it's a beautiful, unmarked accessory . . . tastefully designed in silver gray and bronze to match any decor. Just punch out the perforated panel and the main copy disappears! Designed and produced by Riegel for Staff Supermarket Associates.

Whether you need this kind of creative thinking . . . or greater packaging economy . . . or the last word in flexible protection . . . Riegel can help you.

You will be interested in the new, broader range of Riegel materials and services shown on the following pages.

the new ideas come from

Riegel

RIEGEL PAPER CORPORATION, 260 MADISON AVE., NEW YORK 16, N. Y.

Specialist in the packaging of foods, drugs, and soft goods

Flexible packaging . . . carton board . . . folding cartons . . . carton liners

Duncan Hines... good old fashioned flavors protected in new-fashioned Riegel package

To protect the goodness of *Early American* Cake Mixes, Duncan Hines relies on a special lamination of glassine and polyethylene produced and printed by Riegel.

This package keeps delicate flavors, fine powders, shortenings and critical moisture content firmly protected.

We've a flair for thinking of every product as something special... and developing for it the one best packaging answer, be it pouch paper, glassine, foil, plastic, film or combination... printed, coated or plain. Write for more information today... for the new ideas come from Riegel.

Flexible Packaging Division
Riegel Paper Corp., 260 Madison Ave., NYC 16
Flexible packaging materials for foods, drugs, chemicals

4 packaging styles...4 top sellers produced for Montgomery Ward by Lassiter

Adroit package design by Montgomery Ward merchandises all price lines of Carol Brent hosiery. Paperboard envelopes, cellophane envelopes with printed inserts, box wraps, printed tissues and polyethylene envelopes . . . . are all by Lassiter.

Experienced versatility...that's why Montgomery Ward's designers looked to Lassiter for integrated packaging for their hosiery lines. As the leading specialist in soft goods packaging, we understand both sales and production problems. We know how to create packages that will catch the shopper's eye, promote sales and fit your production set-up.

This kind of *practical* creative packaging can help you. Write or phone Lassiter today.

Lassiter Sales
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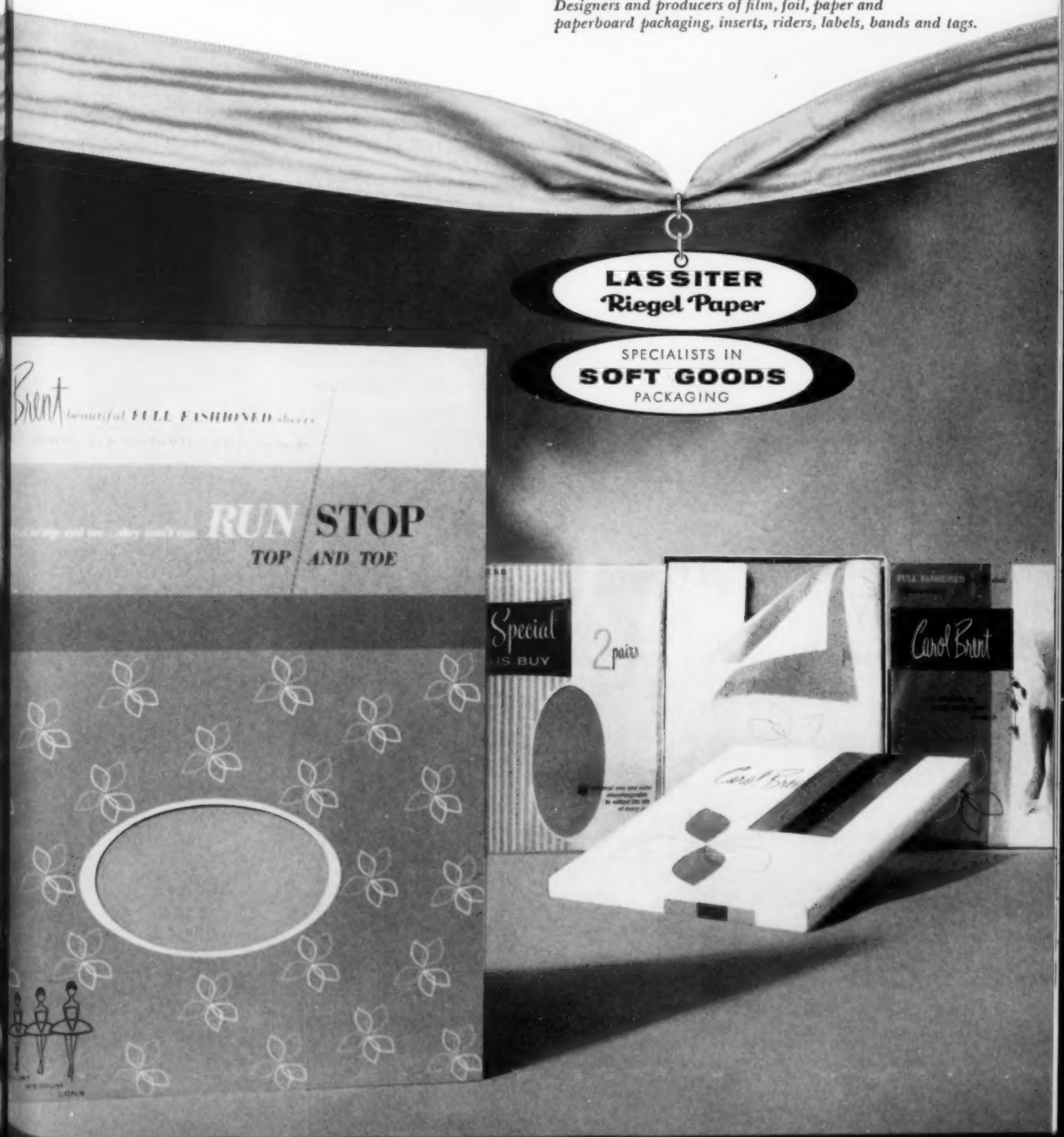
Designers and producers of film, foil, paper and paperboard packaging, inserts, riders, labels, bands and tags.



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Here's how it works: In place of the gauge designation of "300" . . . "450". . . and "600", you can now specify the cellophane type by its square-inch yield per pound. For example, a film such as 300 MSD-60 which now has a yield of 22,000 square inches per pound will be designated 220 MSD-60 (thus using the first three digits of the yield as the gauge designator instead of the less meaningful "300").

Use this list to find new code designations for over

FORMER CODE and yield	NEW CODE and yield
"K"* CELLOPHANE FILMS (polymer-coated, moistureproof, heat-sealing)	
"K" 300-201 21,000 sq. in./lb.	"K" 210-201 21,000 sq. in./lb.
	"K" 250-201† 25,000 sq. in./lb.
"K" 300-202 19,500 sq. in./lb.	"K" 195-202 19,500 sq. in./lb.
"K" 450-202 14,000 sq. in./lb.	"K" 140-202 14,000 sq. in./lb.
	"K" 116-202† 11,600 sq. in./lb.
"K" 300-203 18,000 sq. in. lb.	"K" 180-203 18,000 sq. in./lb.
	"K" 195-203† 19,500 sq. in./lb.
"K" 450-203 14,000 sq. in./lb.	"K" 140-203 14,000 sq. in./lb.
"K" 600 10,300 sq. in./lb.	"K" 103-203 10,300 sq. in./lb.
	"K" 210-FC† 21,000 sq. in./lb.
MOISTUREPROOF, NON-HEAT-SEALING FILMS	
300 MD-31, 32 21,000 sq. in./lb.	220 MD-31, 32† 22,000 sq. in./lb.
300 MD-35, 36 21,000 sq. in./lb.	210 MD-35, 36 21,000 sq. in./lb.
MOISTUREPROOF, HEAT-SEALING FILMS	
300 MSD-51 21,000 sq. in./lb.	210 MSD-51 21,000 sq. in./lb.
300 MSD-52, 53, 54 19,500 sq. in./lb.	195 MSD-52, 53, 54 19,500 sq. in./lb.
450 MSD-53, 54 14,000 sq. in./lb.	140 MSD-53, 54 14,000 sq. in./lb.

†New High Yield

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This new code system replaces one that has outlived its usefulness. Recent announcements by Du Pont of new higher-yield cellophanes which bring important cost savings to packagers made the change imperative. The chart below shows the new and former codes for many of the most widely used Du Pont cellophanes. You can see at a glance how the new code system will give you more useful information faster.

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30 of the most widely used Du Pont cellophanes

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300 MSD-56, 57 18,700 sq. in./lb.	**187 MSD-56, 57** **18,700 sq. in./lb.**
450 MSD-56, 57 13,600 sq. in./lb.	**136 MSD-56, 57** **13,600 sq. in./lb.**
300 MSD-60 21,000 sq. in./lb.	**220 MSD-60†** **22,000 sq. in./lb.**
300 MSAD-86, 87 19,500 sq. in./lb.	**195 MSAD-86, 87** **19,500 sq. in./lb.**
450 MSAD-86, 87 14,000 sq. in./lb.	**140 MSAD-86, 87** **14,000 sq. in./lb.**
300 MSAD-80 19,500 sq. in./lb.	**195 MSAD-80** **19,500 sq. in./lb.**
450 MSAD-80 14,000 sq. in. lb.	**140 MSAD-80** **14,000 sq. in./lb.**
300 MSAD-90 18,250 sq. in. lb.	**182 MSAD-90** **18,250 sq. in./lb.**

FORMER CODE and yield	NEW CODE and yield
INTERMEDIATE MOISTUREPROOF FILMS	
300 LSD 19,500 sq. in./lb.	**195 LSD** **19,500 sq. in./lb.**
300 LSAD 19,500 sq. in./lb.	**195 LSAD** **19,500 sq. in./lb.**
450 LSAD 14,000 sq. in./lb.	**140 LSAD** **14,000 sq. in./lb.**
PLAIN OR NON-MOISTUREPROOF FILMS	
300 PD 21,500 sq. in./lb.	**215 PD** **21,500 sq. in./lb.**
450 PD 15,000 sq. in./lb.	**150 PD** **15,000 sq. in./lb.**
600 PD 12,400 sq. in./lb.	**124 PD** **12,400 sq. in./lb.**
300 PSD 19,500 sq. in./lb.	**195 PSD** **19,500 sq. in./lb.**

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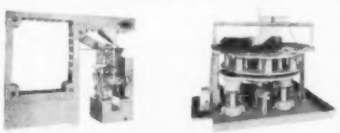

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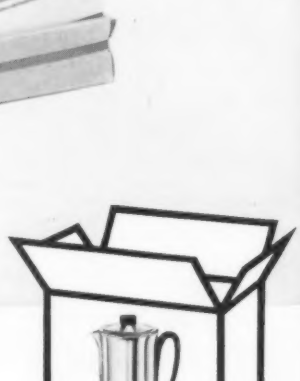

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Mechanize that one-shot "deal"

By George H. Schilling, *Plant Manager*
and George Hines, *Maintenance Engineer*
Simoniz Company, Kankakee, Illinois

A very short time to get a "deal" package into national distribution calls for a fast operation—usually involving automation. Simoniz met its deadline by (1) adapting a standard coupon placing machine to eliminate turning cans on their backs, (2) setting up a spray gun to put adhesive on the upright cans, and (3) electrically interlocking the entire system to operate without a hitch.

Two weeks' lead time was all we had between starting production of the current "deal" package for our vinyl floor wax and first shipment of this product for national distribution. This meant finding a fast, efficient way to apply an envelope (containing a coupon) to the back of each pint, quart, and half-gallon can.

We accomplished our goal—at a comfortable rate of 160 cans/min. for pints and quarts, and 56 cans/min. for half-gallons—with a minimum amount of added cost.

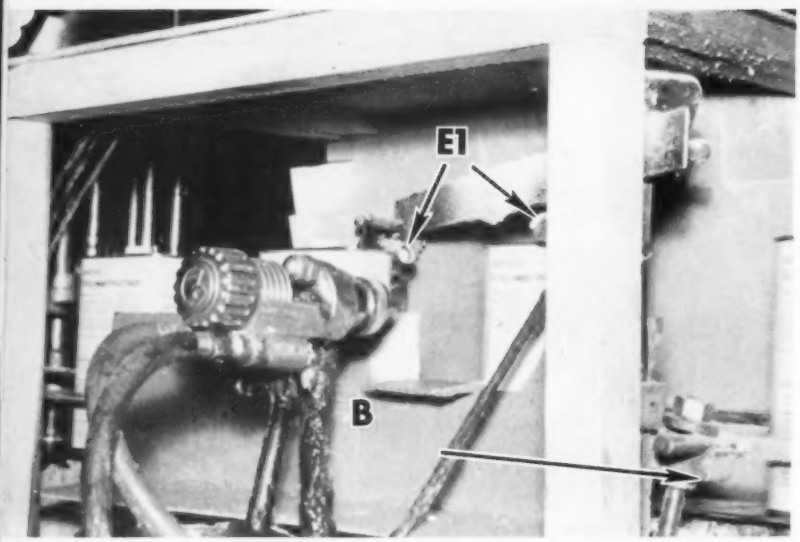
Old Way Not Practicable

At first we thought we could use a setup we already had for attaching envelopes to cans. That operation consisted of filling and capping the containers, rotating them 90° from the vertical, and running them under rollers to receive a spot of adhesive. A crew of four girls then applied the envelopes at a rate of 25/min. per girl at a line speed of 100 units/min. We realized that this would not meet the needs of our deal packaging operation.

When we ran our last deal several years ago and used the hand method, we had two packaging lines—one for pints and one for quarts, each running at 100 cans/min. Since then we have changed our operation to allow for additional packaging lines and also to convert from vacuum to gravity filling for floor wax. We now fill both sizes on just one line—pints at 216/min. and quarts at 204/min. This meant running all sizes on the same line—and at a higher speed than that of previous deals in order to meet sales requirements.

Rotate Machine Or Cans?

We decided to adapt a Thiele coupon placing machine to do the job. This coupon placer normally pulls the coupon from a hopper by means of a vacuum cup. A cam then rotates the cup (with coupon) and forces it straight down onto a package, where the coupon is released. Our plan was to rotate the F-style cans 90°, run them under glue rollers, and then use the coupon placer to deposit our envelopes on the cans. *(Turn page)*



1 ADHESIVE SPRAY BOOTH has electric eye E1 that, when actuated by can cap, triggers pneumatic gun which sprays adhesive in 2-in.-diameter pattern on can. Corrugated mask (B) protects can from adhesive spatter outside spray pattern. (Arrow shows travel direction.)

At this point, however, we asked ourselves two questions:

1. Rather than rotate every can 90° to the horizontal to meet requirements of the coupon placer, can we rotate the *machine* instead?

2. Can we apply adhesive to each can when it is in the vertical plane?

The answer to both questions was *yes*.

Modified Machine

In its normal position, the coupon placer rests on a single iron pipe standard which fits into a vertical angle-iron stand. To mount the coupon placer 90° from its normal position, we welded the end of an iron pipe (same size as the pipe standard on the machine) to the back side, and at the center, of a piece of angle iron (same size as the regular stand), and perpendicular to it.

This formed a "T." (See Fig. 2.) By inserting the pipe "leg" of the T-shaped support into the original angle-iron stand, we were able to put the original pipe standard of the machine into the horizontal angle-iron "trough" of the T-support.

We placed the stand at the back side of the line, with the machine suspended over the line. This allows the head of the machine to hang down in front of the line, where it places the envelopes on the cans. (See Fig. 2.) We positioned the coupon placer just ahead of the case packer and as close as possible to it.

The original coupon magazines had a single angle-iron framework which proved unsatisfactory for our particular envelopes. We made a different type magazine (ME in Figs. 2 and 4) consisting of an open-top sheet-metal trough with a longitudinal slit in the bottom. Mounting the machine 90° from its normal position also meant inverting the magazines to be upright.

Use Electrical Interlock

We modified a four-head coupon placer for our pint and quart line and a two-head machine for our half-gallon line. Having two heads for half-gallons was satisfactory. To meet the required speed for the two smaller sizes, we needed six heads for pints and five for quarts. It was a simple matter to add two vacuum cup mechanisms and two magazines—by sliding them onto the shaft support and locking them in place. In actual operation we use only five heads for quarts. We add the sixth head for pints.

The coupon placer normally uses mechanically-operated air valves. However, we changed these to operate electrically so we could interlock the operation of the machine with the rest of the equipment on the line. We also installed a vacuum switch, wired in series with the solenoid valve on the coupon placing machine. Thus, the machine does not complete its cycle if a suction cup drops a coupon. This prevents the vacuum cups from striking the adhesive on the cans and becoming coated.

Spray Adhesive Onto Cans

Since we had eliminated the necessity of rotating all cans 90° from the vertical plane, we needed a different method of adhesive application. The roller method pre-

George H. Schilling has a B.S. degree from Manhattan College and an M.S. degree from University of Notre Dame. Since being graduated, he has been associated with Simoniz or one of its affiliates. Before becoming plant manager at the Kankakee plant in 1957, he was plant manager of the Benton Harbor, Michigan plant. He is a member of American Chemical Society.

George Hines has been with the Simoniz Co. for 16 years. Before assuming his present position as maintenance engineer at the Kankakee plant, he was maintenance man and maintenance supervisor at the Chicago plant. Mr. Hines is a member of the Kankakee Valley Engineering Association.

viously used would not work with the cans upright. We decided that the ideal way was to spray on the adhesive. This turned out to be reasonably simple.

We selected a pneumatically-operated spray gun to give an adhesive spray pattern approximately 2 in. in diameter—sufficient to hold the 4x2¾-in. envelope. We mounted the spray gun (see Fig. 1) on the side of the conveyor immediately at the discharge end of the capping machine. The distance between nozzle and the cans passing by (plus a given adjustment of the nozzle) controls the size of the spray pattern. The height of the gun is such that the adhesive hits the portion of the can above the instructions for using the wax. The gun draws the adhesive from a drum sitting nearby.

Built "Spray Booth"

We built a simple spray booth (see Fig. 1) of 2x2-in. lumber covered with corrugated board and positioned it over the spray gun and the adjacent conveyor section.

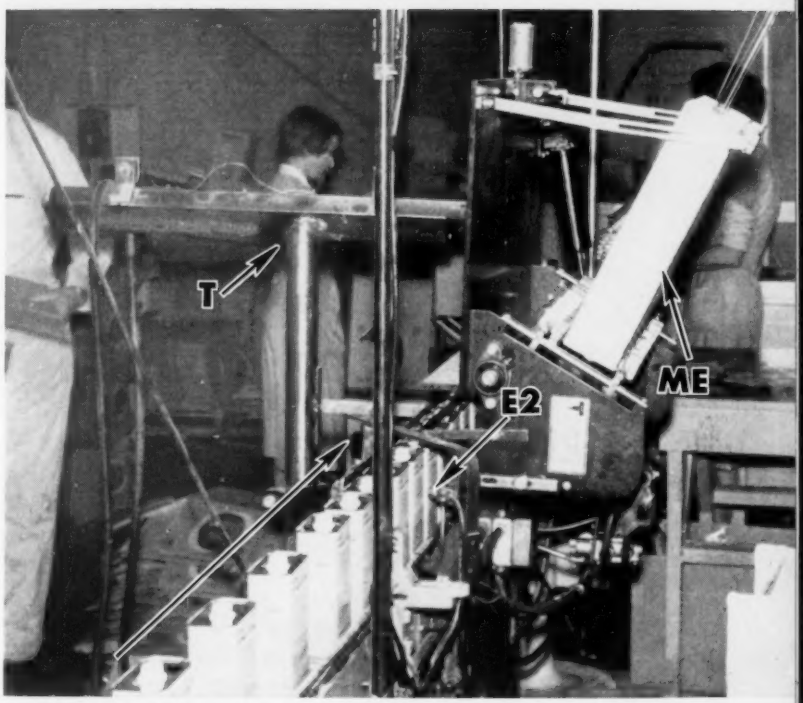
Installed between the gun and the conveyor inside the booth is a piece of corrugated board (B in Fig. 1) with a square cut-out at the top edge. When the gun directs a shot of adhesive through the cut-out, this board protects the can from adhesive spatter outside the 2-in. spray pattern.

An electric eye (E1 in Fig. 1), mounted inside the spray booth, operates the spray gun. This eye is suspended over the can conveyor and at an angle to it.

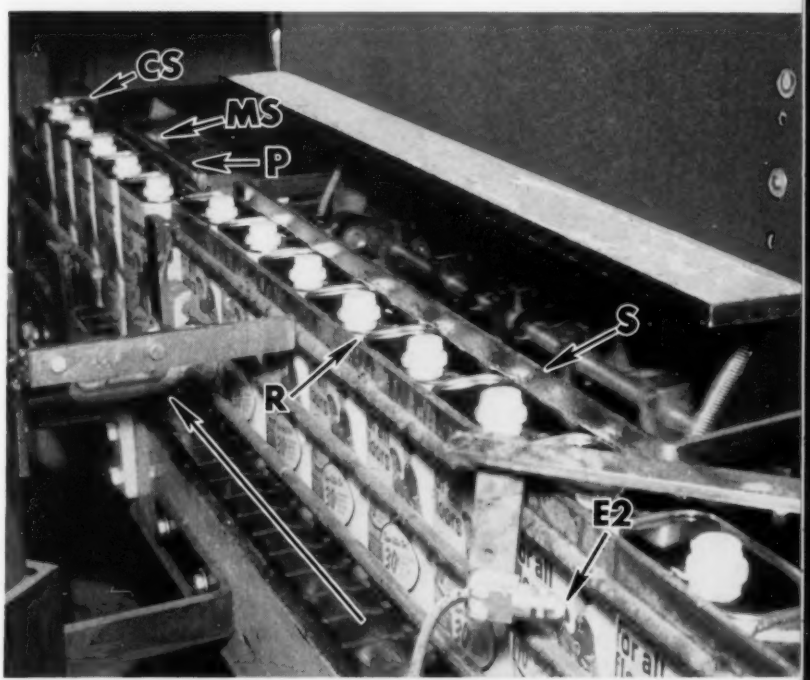
Adhesive Set Time

To permit time for the adhesive on the cans to develop initial tack, we installed the coupon placer and the spray gun as far apart as the physical layout of our line allows—about 20 ft.

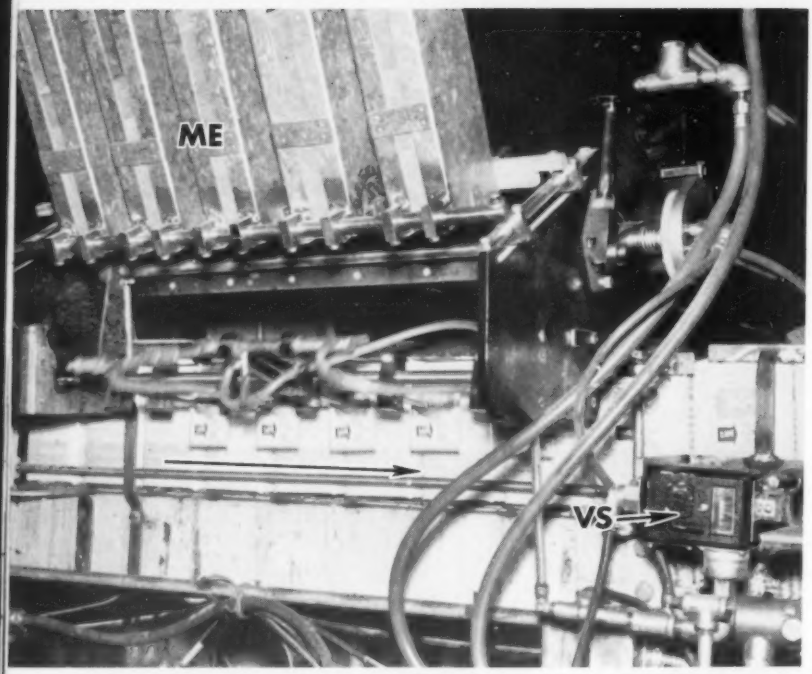
At a speed of 160 cans/min. this 20-ft. distance allows about 15 to 20 sec.—depending on can size—for the adhesive to set. Although we would like to have a longer set time (say, twice as long) the present one is satisfactory. *(Turn page)*



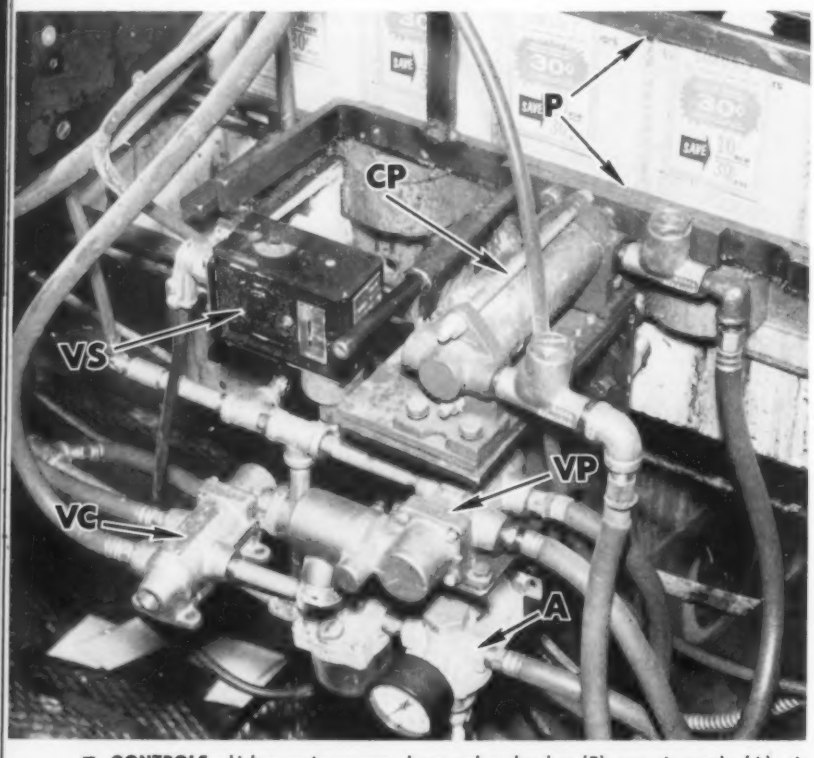
2 COUPON PLACING MACHINE, rotated 90° to hang down in front of packaging line, pulls envelopes from revamped magazines (ME) and deposits them on cans. Company engineers built T-support (T) to allow this positioning of machine. (Arrow shows travel direction.)



3 CANS PASS ELECTRIC EYE E2; leading can hits can stop (CS), closing Micro Switch (MS). Cans accumulate until E2 stays closed. Closing MS and E2, both wired in series with normally closed eye E3 (Figs. 6 and 7), cycles coupon placer and pusher bar (P). Guide rail (R), moved up to top chime, holds can rigid while receiving envelope. Sustaining bar (S) catches can caps, prevents cans from bouncing off conveyor. (Arrow shows travel direction.)



4 **MAGAZINES** (ME), redesigned and turned over—because of rotating coupon placing machine 90°—are open-top sheet-metal troughs, each with longitudinal slit in bottom. If suction cup drops coupon, vacuum switch (VS) keeps machine from completing cycle, thus preventing empty cup from striking adhesive already on can. (Arrow shows travel direction.)



5 **CONTROLS** which operate coupon placer and pusher bar (P) are: air supply (A), air valve operating vacuum cup assembly (VC), pusher bar air cylinder (CP), pusher bar air cylinder operating valve (VP), vacuum switch (VS)—all work together for foolproof operation.

Cans Enter Spray Booth

In operation the capping machine discharges the filled and capped cans directly into the adhesive spray booth. As each can travels along the conveyor, its cap breaks the light beam on the electric eye, which in turn triggers the spray gun.

Exact location (in the horizontal plane) of the light beam is important to insure that the shot of adhesive is centered (left to right) on the can. The small amount of adhesive "mist" passing through the light beam is insufficient to actuate the eye.

No Cap, No Adhesive

Since the light beam is broken by the can caps, a can without a cap does not actuate the spray gun and therefore gets no adhesive.

A can with no adhesive will not pick up an envelope at the next station. This combination (no cap, no envelope) makes it easy for the operators to spot an incomplete can before it enters the case packer.

The Coupon Placer Station

After receiving adhesive, the cans proceed along the 4½-in.-wide Rex chain conveyor to a stop (CS in Figs. 3, 6 and 7) six can lengths beyond the coupon placing machine (seven can lengths for pints). The lead can closes a Micro Switch (MS in Figs. 3 and 6) as it reaches the can stop. This Micro Switch, normally open, is wired in series to electric eye E2 (Figs. 2 and 3), normally open, with time delay, and electric eye E3 (Figs. 6 and 7), normally closed.

All three of these components must be closed simultaneously to complete the circuit which cycles the coupon placer and pusher bar. (P in Figs. 3, 5 and 6.) Thus, this electric interlock prevents the coupon placer from cycling until cans are in position.

With the lead can resting at the can stop, the remaining cans back up along the line. It takes 13 cans from the can stop to break the light

beam on electric eye E2, mounted just ahead of the coupon placer. This guarantees that there are cans in front of the machine. With this situation, the electrical circuit is closed, operating the coupon placing machine and the pusher bar simultaneously.

The pusher bar is adjusted to operate faster than the coupon placing machine by means of flow control valves and separate air regulators. The pusher bar must push the cans to the opposite side of the conveyor and return before the coupon placing machine completes its cycle.

Need Only One Conveyor Chain

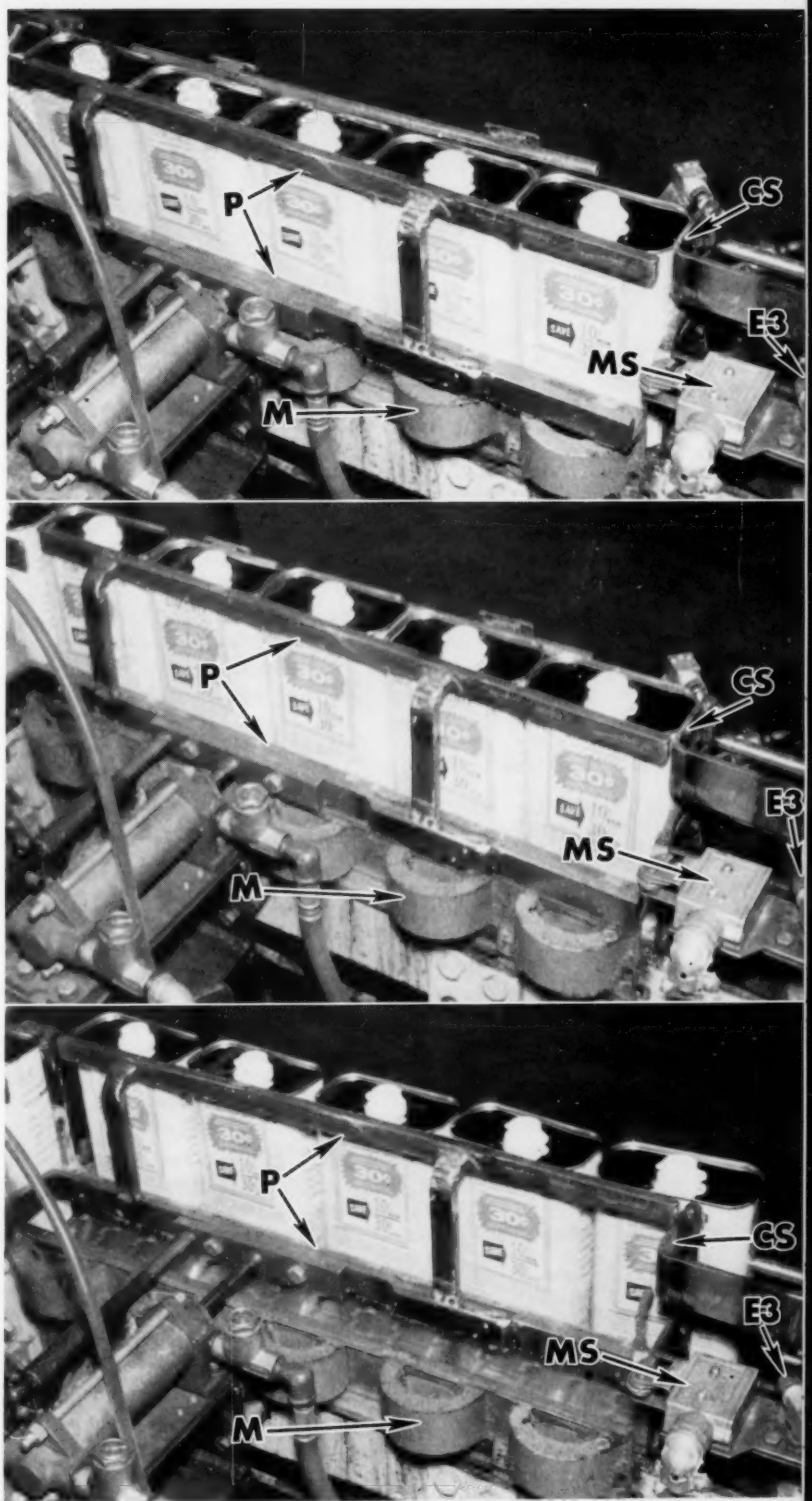
The cans travel along one edge of the conveyor (the edge adjacent to the coupon placer) as close as possible to it. Then, after receiving their envelopes, the cans move to the can stop directly in front of the pusher bar, which indexes them to the opposite side of the chain belt. This arrangement allows us to get by with only one chain belt—the same one we use for our regular production.

The Complete Operation

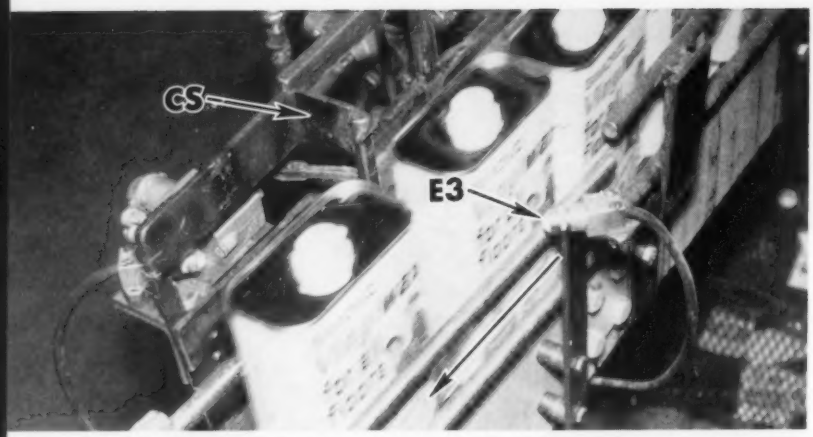
To review the whole operation briefly, picture the entire conveyor, from the adhesive spraying station to the can stop, filled with cans. With this arrangement, the Micro Switch and electric eye E2 are closed, completing the circuit, which causes the coupon placer to cycle.

At the same moment the coupon placer cycles, the pusher bar pushes five finished cans free of the can stop to the opposite edge of the conveyor chain. This allows the five cans which have just received their envelopes to proceed to the can stop immediately after the pusher bar returns to its resting position, and then more blank cans take their place in front of the coupon placer.

The five cans pushed to the opposite edge of the conveyor chain proceed to the case packer. As long as the conveyor between the Micro Switch and electric eye E2



6 **PUSHER BAR** (P), actuated when Micro Switch (MS) and electric eyes E2 (Figs. 2 and 3) and E3 (see also Fig. 7) complete electrical circuit, moves finished cans to opposite side of conveyor where, upon clearing can stop (CS), they proceed to case packer. Magnets (M) hold cans against front guide rail, preventing their creeping across conveyor before being pushed. Note can movement by comparing can at can stop in photos (top to bottom).



7 CLEARING CAN STOP (CS), cans proceed to automatic case packer. While passing normally closed electric eye E3, cans actuate it, which breaks circuit, preventing cycling of coupon placer and pusher bar until all cans are free of E3. (Arrow shows travel direction.)

remains filled with cans, the operation is continuous, provided the cans clear electric eye E3. If for any reason E3 remains open, the operation stops, but it starts again automatically the instant the cans clear the conveyor, allowing E3 to close.

Magnets Keep Cans In Place

When we first set the line up, we encountered a number of minor problems which we solved rather simply. One of them was that the cans in front of the pusher bar tended to creep to the opposite edge of the conveyor chain before being pushed. This threw our timing off.

To correct this, we installed five U-shaped magnets (M in Fig. 6) to hold the first five cans firmly in place against the pusher bar (P). Then, when the bar is actuated, it pushes the cans out of this magnetic field to the opposite edge of the conveyor chain.

Guide Rail Holds Cans Firmly

We were unable to hold the cans in position under the coupon placing machine within the ±1/16-in. lateral tolerance the machine requires for depositing envelopes on the cans. We originally used the regular conveyor guide rail to exert back pressure on the cans as the coupon placer deposited the envelopes. This guide rail was located at a point about midway between the top and the bottom.

As the coupon placer forced the envelopes onto the cans, the cans tended to flex beyond the tolerance. We eliminated this difficulty by moving the back pressure guide rail (R in Fig. 3) up to the top chime of the can. Because of greater rigidity of the chime, the can remains in place within the required tolerance.

Bar Keeps Cans From Falling

Another problem was at the sides of the cans facing the coupon placer. We had eliminated the guide rail on the side of the cans facing the vacuum cups in order to give sufficient clearance for placement of the envelopes. As a result, the cans had a tendency to "bounce" off the conveyor after the vacuum cups hit them.

We eliminated this problem by placing a bar (S in Fig. 3) across the tops of the cans about ½ in. to the side of the caps. Thus, when a can starts to bounce off the conveyor, the cap catches on this sustaining bar and holds the can in place.

The pint and quart line operates at a rate of 160 cans/min. with the addition of only one girl to the line. She inspects cans, supplies any missing envelopes, and keeps the magazines of the coupon placer filled. Rate of missing envelopes on this line was rather high at first, but as we refined the operation, the frequency dropped to 1 per cent.

The Half-Gallon Line

Putting envelopes on our half-gallon cans was relatively simple. Immediately after the capping machine we installed a spray gun controlled by an electric eye operated by the leading edge of the can.

We cannot use the caps to actuate the eye as with the pints and quarts. Since this type of can has a handle, as well as a cap on the top, the handle would also actuate the eye causing two shots of adhesive on one can.

We installed a time-delay relay in series with the electric eye to insure getting the adhesive spray centered (left to right) on the side of the can. After glue application, each can continues along the conveyor chain across a dead plate to a stop at the infeed end of the semiautomatic case packer.

Since it takes six cans across the dead plate to actuate the Micro Switch, we installed the coupon placer at the fifth and sixth positions. We wired the solenoid valve of the coupon placing machine parallel with the pusher bar of the semiautomatic case packer, so that when the Micro Switch closes, the pusher bar and coupon placing machine cycle simultaneously.

After sufficient cans are in place and the Micro Switch closes, the coupon placer cycles and deposits envelopes on the cans. Simultaneously, an air-operated pusher bar indexes the two cans at the stop into the case packer. On return to its original position the pusher bar allows two more cans to index in front of the coupon placer.

Our half-gallon line operates at a normal speed of 54 to 56 cans/min. with the addition of only one girl to the crew. She keeps the magazines of the coupon placer filled, inspects for envelopes on the cans, and replaces missing ones manually. Incidence of missing envelopes on this line is less than 0.5 per cent.

(End)

Package cushioning: inside or out?

By Paul M. Boyer
Manufacturing Engineer
Electronics Division
Westinghouse Electric Corporation
Baltimore

Why put cushioning inside the package when putting it outside gives so many advantages? Westinghouse now uses outside cushioning to crate a delicate Navy radio transmitter—and saves 30 per cent on packaging time, 40 per cent on package cubage, 25 per cent on total weight.

We now package a precision-built shipboard communications transmitter for the Navy in a plywood crate with cushioning materials built into the skids—*outside* the crate. Formerly the cushioning for this costly and fragile transmitter was *inside* the package.

The complete transmitter is a self-contained unit weighing 975 lb. and measuring 72x18x30 in. It has five pull-out drawers full of electronic equipment and resembles a filing cabinet. We cannot ship the transmitter on end (its normal operating position) because it is unstable when standing by itself. Aboard ship it is bolted into an L-shaped shock mount to (1) protect it from shock and vibration and (2) keep it from tipping. However, it was out of the question to ship it in this position.

Therefore, we decided to crate this unit on its back despite the fact that all vertical shocks to the crate go through the horizontal plane of the transmitter—the plane not designed to absorb shock. The dimensions entailed in packaging the unit this way, even with a 6-in. allowance for shock mount sway around the unit, gave us a package of a feasible size.

However, it was still not completely satisfactory, and soon after we started making these units for the Navy, we sought to make each crate smaller, lighter, and easier to unpack.

Old Package: Bulky

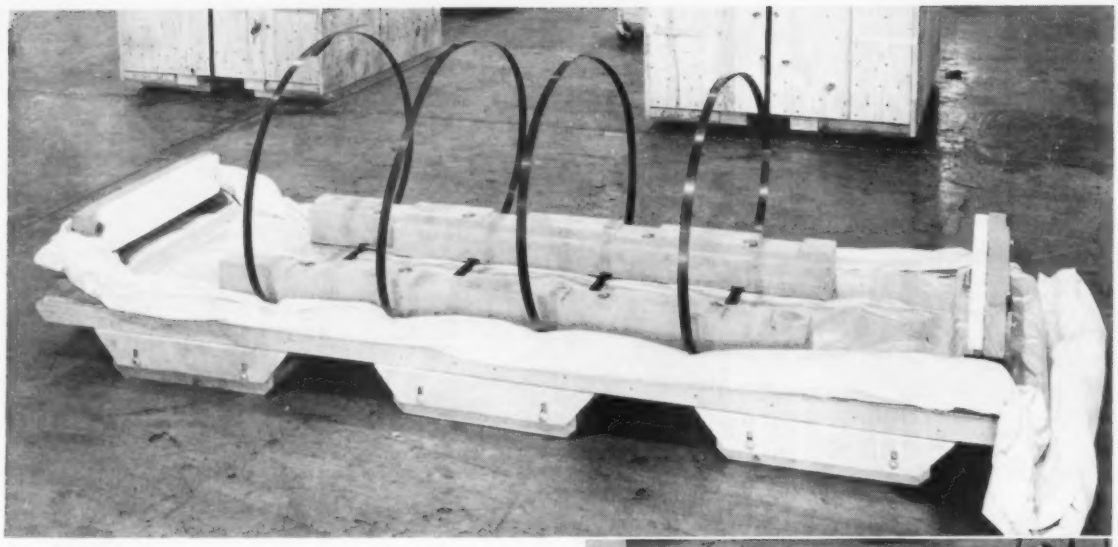
Originally we steel strapped each transmitter into a 100-lb. steel cradle mounted inside a 525-lb. nailed wood-sheathed crate measuring 87x35x42 in.

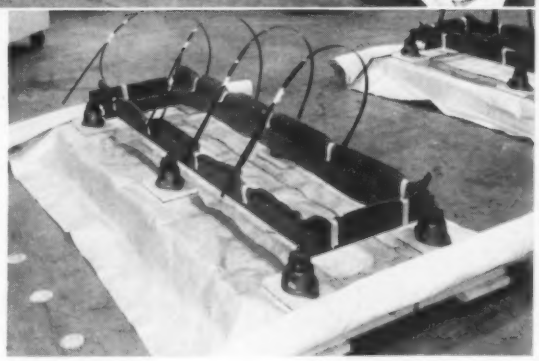
To keep the delicate electronic tuning devices from corroding during transit, we put each unit inside polyethylene/aluminum foil/scrim material (made per MIL-B-131) and then heated it to form a "bag." The bag was gasketed around all the mounting gear to keep it air tight. We also put 21 16-unit desiccant bags inside the bag to keep the transmitter dry.

In our old package, each felt-lined cradle was attached to the crate skid with six rubber shock mounts. We allowed 12 in. along the length and across the width of the crate to give the mounts room to sway as they absorbed shock. All this shipped a lot of air and wasted a lot of valuable transportation space.

Features Of New Package

Our search for a new package for the transmitters, in conjunction





TO ABSORB SHOCK, in new package (above) wood blocks damped by polystyrene foam move up and down in 1-in. vertical slots. Old one (right) allowed 12 in. along length and width for mounts to sway.

with W. W. Hagan of our purchasing department, led us to Thomas P. Wharton, a packaging consultant, who hit on the concept of putting the cushioning outside the present cushioned skids.

Our new package starts with six "feet" or skids of wood/foam/steel channel in a sandwich construction. The cushioning material for the transmitter is thus an integral part of the skids which go on the outside of the crate. A 15x6x1½-in. block of expanded polystyrene foam fits between the inner surface of a steel channel and the top surface of a 15x6x4-in. wood block bolted to the channel sides. Bolts holding the wood in the channel go all the way through the wood and through slots in the steel plate. Each wood block is free (except as damped by the cushion) to move up and down in the 1-in. vertical slots in both sides of the channel.

Foam is precompressed ¾ in. between the channel and wood block to lower its tendency to creep; thus shock-absorbing properties of the feet remain more constant during use.

A 79x23-in. sheet of ¾-in. exterior-grade plywood, bolted through 2x6x80-in. wood runners to the feet, makes up the base of the crate. Wood headers (2x6x20-in.) bolted to the top of the crate base at each end serve as mounts for the bumpers which hold the transmitter in place during shipping.

The shock-absorbent bumpers—consisting of a 17⅛x3⅜x1½-in. block of expanded polystyrene foam glued to a wooden block 18⅜x4x2-in.—run horizontally across each end of the crate about 4 in. above the base. The bumpers are attached to the base by two 3x⅜-in. steel L's bolted through both of the headers.

Two 4x4x48-in. notched transmitter mounts, made of built-up pressed fibreboard composition material, are bolted through the crate base parallel to each other and 12 in. apart. The notches provide clearance for bolts extending from the transmitter and let workmen run steel strapping under the mounts to hold the transmitter in place.

Crate walls are single sheets of ¾-in. exterior-grade plywood braced

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on the inside with wooden 1x48's; ½-in. exterior plywood is used for the top. This provides strength to resist hazards of shipboard handling—for example, other equipment piled on top of the crate—and makes a smooth surface for addressing, labeling with "fragile" warnings, etc.

Check On Humidity

An inspection door built into one sidewall of the crate and attached with eight wood screws exposes a humidity indicator showing humidity inside the bag. If the humidity reaches a critical level (as shown by the indicator), the transmitter is removed and repacked to prevent corrosion damage; so far this has not been necessary.

A screened, baffled ventilation hole in each end of the crate lets air circulate freely through the inside. This keeps moisture from condensing and collecting in the crate and possibly damaging the transmitter.

Our new plywood crate, complete with mounting gear and bracing, weighs 225 lb.—nearly 65 per cent less than the old crate. Yet we lose no strength or handling capability in our new crate. This is important since a puncture (from a fork truck, for example) or collapse from weight piled on top would ruin the expensive electronic equipment inside.

Package Assembling

We lay out skids for the transmitters side-by-side in the packing area making a "production line" operation which takes about half the time originally required.

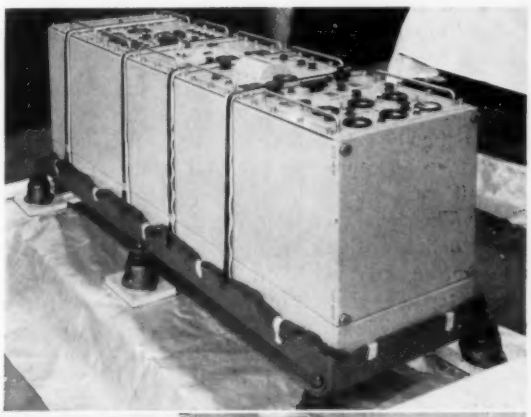
First, two men remove the fibreboard mounts from the skid assembly and lay polyethylene/foil/scrim sheeting (scrim side down) out flat across the skid. Rubber gaskets (4x4x¾ in.) are put around the mounting bolts on both sides of the flexible sheet to make the bag air-tight when it is sealed. The fibreboard transmitter mounts go back over the gaskets and are hand-bolted into place.

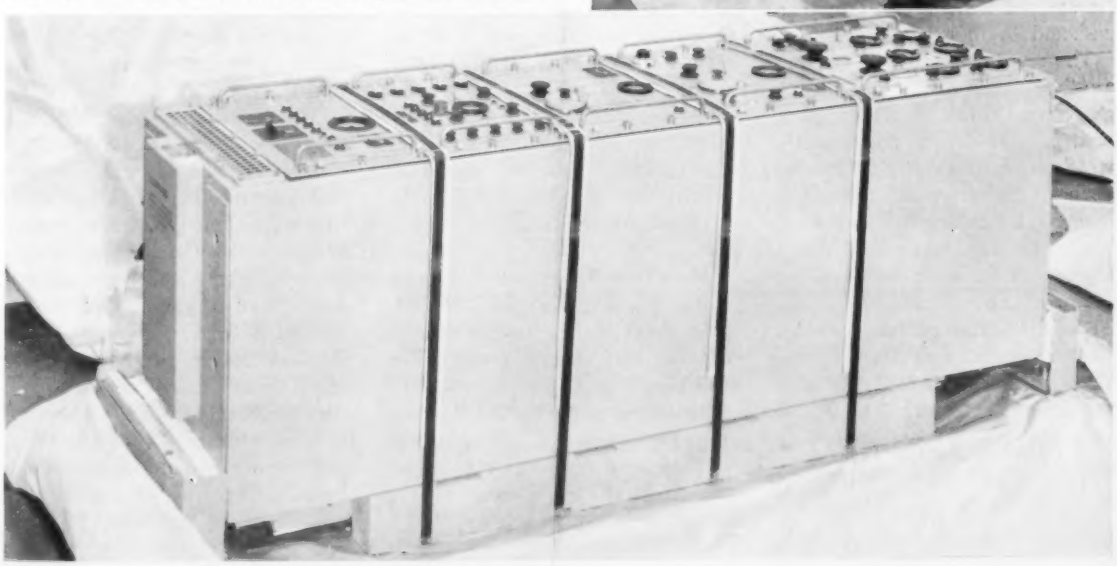
Next, these men bolt the bumpers to the headers, gasketing all bolt holes as before.

A sling and overhead crane lifts the transmitter and lowers it onto the mounting blocks between the bumpers. The wiring panel at the back of the unit extends downward between the mounts.

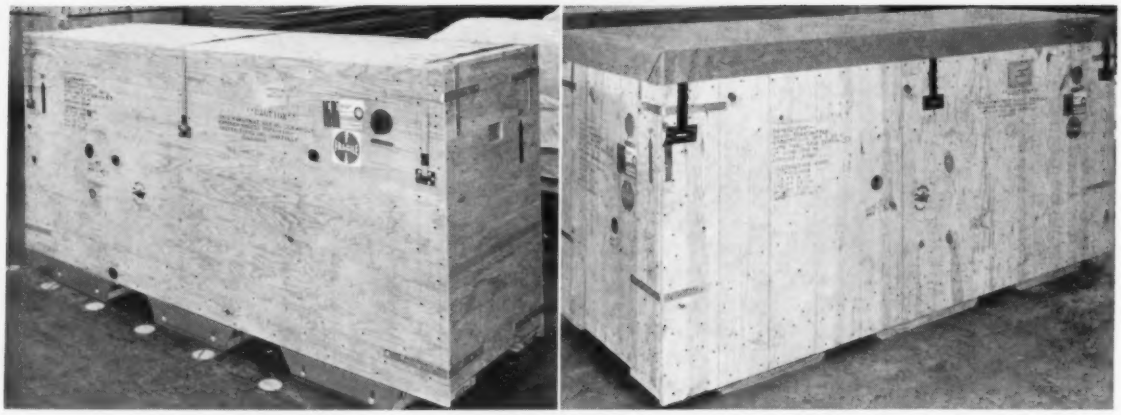
Workmen then run four 0.035x¾-in. steel straps around the transmitter and under the mounting blocks to immobilize the unit in the mounts. Plywood strips on strips of gasket material placed across the face of the unit prevent the steel strapping from damaging the unit's surface.

When the transmitter is securely





NEW PACKAGE (below) has six skids of wood/foam/steel channel in sandwich construction (hidden by scrim material). Old package (right) used 100-lb. felt-lined steel cradle attached to crate skid with six rubber shock mounts. To protect against corrosion, polyethylene/foil/scrim material is heat-sealed to form bag around transmitter.



ADVANTAGES of placing cushioning outside: new crate (left) weighs 400 lb. less than old one (right) and takes up 45 cu. ft. as compared to 76 cu. ft.—a reduction of 40 per cent. Also new crate reduces length by 7 in., width by 11 in., and height by 2 in.

strapped in place, the unit is covered with cushioning material to protect the finish and the protruding dials and meters; then bags of desiccant are put along the crate base. Two men hand-form the flexible bag around the unit and heat seal it, leaving a short opening along one of the seams. An attachment on a vacuum hose is used to remove air from the bag and draw it snugly around the transmitter. The slot is then heat sealed.

Instruction manuals wrapped in the same material as the transmitter are taped to the top of the bag with strips of glass fibre-reinforced pressure-sensitive tape. The plug-type color-spot humidity indicator (made per MIL-I-26860) is then gasketed to the side of the bag.

The crate end and wall sections are then nailed to the skid and interior end bracing. The top is held in place by tensioned straps which are fastened to the crate by anchor plates, thus facilitating opening. By cutting the steel strapping, the top comes off easily. Corners of the crate and sides are reinforced by corner straps per MIL-C-104. Except for markings, unpacking instructions, labels, etc., the package is now ready for shipment.

Package Passes Tests

To be sure that transmitters hold up in the new package, we first tested a transmitter electrically to see that it was working. Then we packaged it in one of our new crates and tested it according to MIL-P-116. Leon Newman, packaging chief (Bureau of Ships, Code 634), cooperated with us on all tests and expedited the change to the new packing method so that the maximum savings could be obtained through quick implementation.

To prove the package's ability to withstand rough handling, we first blocked one end of the crate 5 in. above the floor. Using a chain hoist, we raised the other end of the crate 12 in. and dropped it twice on each end from this height.

To test the crate's ability to absorb longitudinal shocks, we attached it to a 16-ft. radius chain, forming a pendulum with one end of the crate resting against a backstop. Then we pulled it back from the backstop until the center of gravity was raised 5 in. We hit it once on each end in this part of the test.

Since the length of the crate makes it unlikely to get a "broadside" shock of great magnitude, we did not and do not now test for lateral shock.

In addition to the MIL tests, we put a packaged transmitter in one of our delivery trucks and drove it around town (making deliveries to other plants) for a week. After running tests on the package, we retested the transmitter. It worked properly—proving the vibration- and shock-absorbing characteristics of the crate under rough handling and prolonged conditions are satisfactory.

Advantages

The new prefabricated crate has several advantages over the old wood-sheated crate. An important one is size: from 76 cu. ft. for the old crate to 45 cu. ft. for the new one—a saving of 31 cu. ft. This decreased volume comes largely from changing our cushioning concept. Instead of allowing an extra foot of length and width inside the crate for shock mount sway, we put the cushions on the outside, reducing the length 7 in. and the width 11 in. In addition we lowered the height 2 in.

Our new crate weighs 225 lb.—400 lb. less than the old 625-lb. crate. Unpacking is a much simpler operation—crowbars and similar wrecking tools are not necessary to disassemble the crate. All a man needs to take it apart are a screw driver, wire cutters, and a hammer.

Finally, the knocked-down prefabricated crate takes 33 per cent less storage space in our plant. And dealing with only one supplier who furnishes complete package components reduces our inventory. Formerly we needed several suppliers providing separate packaging components. *(End)*

Simplified glass container specs... ...based on performance

By J. D. Breslin
Manager, Tablet Department
The Wm. S. Merrell Company
Division of Richardson-Merrell, Inc.
Cincinnati

The attributes of glass containers (such as visibility; chemical inertness; strength; flexibility in design, size, shape, and color; storage stability plus adaptability to high speed production) make them well suited for a host of products. Frequently the "pros" far outweigh the "cons"—the major disadvantages being breakage and weight. These positive and negative factors combine to form a single basic requirement of any glass container: *performance.*

To the user of glass containers, performance means many things:

Technical adequacy—Will the package preserve and/or protect the product from the time it is packed until consumed or used by the ultimate consumer?

On-the-line—Will it fit into production economically and be strong enough to withstand normal abuse in uncasing, conveying, washing, filling, capping, labeling, casing? Will it be free from defects that would cause damage to packaging equipment and/or personnel?

In shipment—Will it stand up during shipment without breakage or damage to the product?

Consumer use—Will it withstand normal abuse of consumer usage? Will the consumer have any difficulty in opening, closing, or storing the container? This performance requirement is probably the most important since it can affect repeat sales.

All of the above factors constitute normal performance, and this is what should be expected of a glass container.

User, Supplier Responsibilities

Both the packager and glass manufacturer must share the responsibilities for performance, and both can clearly define and assign these responsibilities. The packager must spell out in detail the performance necessary: technical requirements, operating conditions, conditions of use, etc. In essence, the packager's specifications rest on the performance characteristics previously outlined—and on these factors alone. Specifications calling for quality in excess of these performance requirements are superfluous.

The glass container manufacturer is responsible for manufacturing and shipping quality glass containers that meet the performance requirements the packager specifies. How to do this is clearly the supplier's responsibility rather than that of the user.

Either of two basically different glass manufacturing techniques contributes to getting this performance. One method tends to make bottles with heavy shoulders, while using the other tends to distribute extra glass in the heel area; but both methods lead to the production of high quality glass containers. Under these con-

Basing glass container requirements solely on performance—especially in terms of the "over-all" functions required of the container—simplifies specs yet makes them realistic and effective. Mr. Breslin shows how to do this. He also discusses the relationship of reshipper specs to glass performance and outlines an ideal way to develop shipping containers for a new design bottle.

ditions, a packager can clearly see that wall thickness specifications, for example, lose much of their meaning.

Overspecification has other pitfalls and may actually deter progress. For example, specifications that are too strict do not give the supplier sufficient leeway for varying conditions or incorporating improvements and will, in the long run, increase glass container costs.

SPEC REQUIREMENTS

Since we have established that too strict a specification is undesirable, let us see what we do need in the way of a glass container spec.

What Is Required?

The primary purpose of a specification is to eliminate any chance for confusion between supplier and user regarding what is required. When buying a standard item* (i.e., one which is available without developing private molds), select your supplier(s) and ask for a drawing of the item for your approval.

If you have special requirements which must be met to obtain a required performance level, make them known to the supplier at this time. For example, specify limitations and/or requirements that your packaging equipment or techniques may impose, such as in automatic uncasing, washing or cleaning, filling, labeling, casing, or conveying methods. In this connection, work out details with the suppliers to avoid impractical specifications.

Typical Spec

Fig. 1 is a typical supplier drawing covering a standard item. Note the drawing shows all critical dimensions and tolerances; it does not show glass distribution or wall thickness. Review this dimension drawing carefully. Note especially which dimensions are critical in your operation. For example, these could include, among others:

1. Diameter, length, or width—if bottles need aligning in groups for any operation, or indexing for labeling. Variations in diameter will cause misalignment.
2. Label area (and surface) if critical.
3. Over-all height for bottles which are vacuum filled.

Call the supplier representative's attention to any critical dimensions, requesting him to inform the plants concerned to pay particular attention to these points.

Identification

Now assign a commodity number or other means of ready identification to the bottle chosen. This number distinguishes it from all other similar bottles. A bottle that is in all other respects the same as another should be assigned a *different* commodity number if it has any *one* of these differences:

1. Different glass (flint, opal, amber, etc.).
2. Different finish.
3. Different reshipper size.
4. Different reshipper printing.

For each new bottle selected you should furnish your purchasing department a list of approved suppliers with the respective mold numbers.

RESHIPPERS IMPORTANT

It is impossible to divorce the specifications of a shipping container from that of a glass bottle since the safe arrival of the product at its destination hinges on the performance of both.

The advent of the reshipper† concept made it imperative to include shipping case specifications with the purchase specifications for glass containers.

1 TYPICAL SUPPLIER DRAWING for 120-cc. wide-mouth jar shows all critical dimensions and tolerances but does not show glass distribution or the thickness of walls.

→

Two Types

Reshippers are generally of two types:

RSC—regular slotted container—with all flaps the same length. The outer flaps meet at the center while the inner flaps do not. The space between the inner flaps varies depending upon the relationship of length to width. Fill-in or plug pads may be required to level the bottom.

CSSC—center special slotted container—with the end flaps of greater length than the side flaps so all meet. Since the top and bottom areas are completely covered by two thicknesses of corrugated fibreboard, no fill-in pad is necessary to make the bottom level.

Regulations

You should not proceed to develop reshipper specs without first becoming well acquainted with the various regulations governing shipments of glass containers in solid or corrugated fibreboard boxes. These are:

Rule 41 (Consolidated Freight Classification No. 21 and Uniform Freight Classification No. 4) is the basic regulation of the railroads governing freight specifications for the materials, construction, and sealing of solid or corrugated fibreboard containers for railroad freight shipment.

(Turn page)

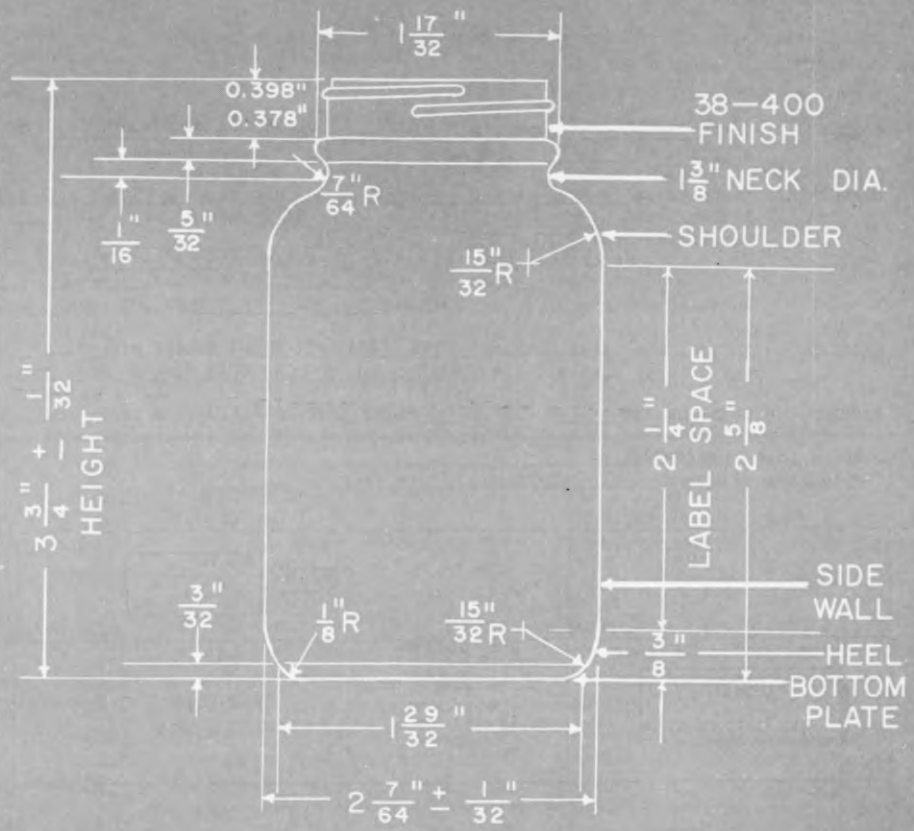
*Glass Container Manufacturers Institute designs showing recommended specifications for approximately 65 lines of containers of various designs and G.C.M.I. drawings covering recommended standards for some 80 finishes in hundreds of sizes to fit closures made of metal, plastic, cork, rubber, and paper in a wide range of designs (pry-off, screw thread, lug, crown caps, and various friction finishes) are available from the Glass Container Manufacturers Institute, 99 Park Ave., New York 16, N.Y.

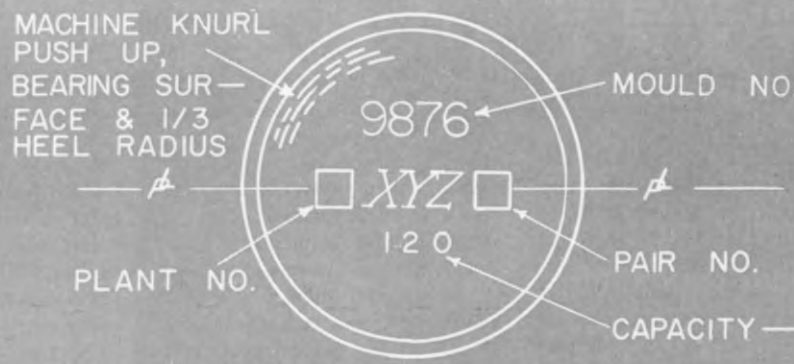
†Reshippers are cases manufactured and printed to the user's specifications into which the glass supplier packs empty containers for shipment to the user for reshipping filled containers to the customer.

John D. Breslin is a graduate of University of Cincinnati, where he received his degree in chemical engineering. He has been associated with The Wm. S. Merrell Co. since his graduation, spending several years in a staff capacity, as packaging engineer, and also as manager of the packaging department previous to assuming his present position. Mr. Breslin is a member and former director of the Ohio Valley Packaging Association.

BY J.D.B DATE 4/10/61 SUBJECT SAMPLE GLASS SHEET NO 1 OF 1

CHKD BY DATE CONTAINER SPEC. JOB NO.





SPECIFICATIONS

MOULD NO	9876	O'FLOW CAP.	4.66
CAPACITY	4.06 ± 3/32 oz.		
FILL POINT	2 27/32" UP		
WEIGHT	3 3/4 ± 1/4 oz.		
FINISH	38mm–400		
GLASS	AMBER		

XYZ GLASS CO.

TYPE 120cc WIDE MOUTH JAR

SCALE FULL

BY J.D.B DATE 4/10/61

Commodity No. Br. 100
Shipper for 12
Date 10-8-59
Supersedes 2-14-58

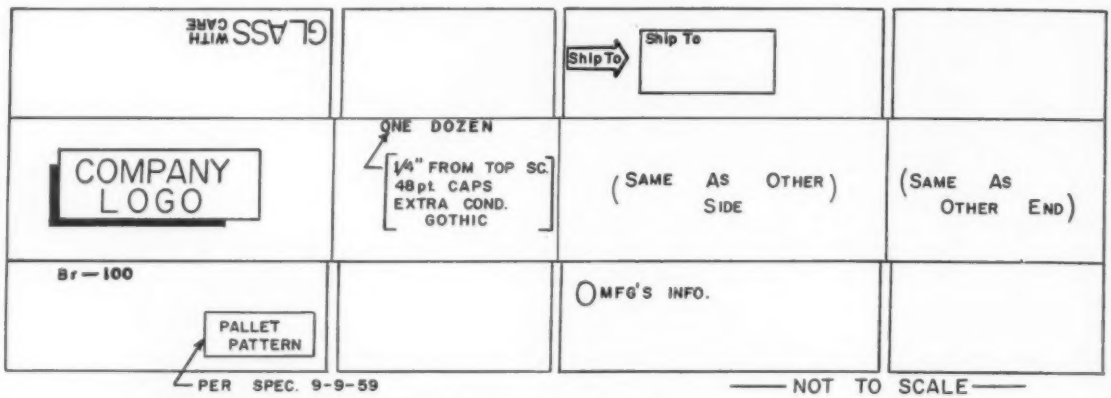
BOTTLE Color AMBER Capacity 4 oz. Type Round, Wide Mouth Finish 38mm-400
Supplied in ✓ Reshipper for 12 ~~Service carton~~

CORRUGATED Carton size 9-3/16" x 7" x 4" Cell size 2-3/16" x 2-3/16" x 4"
Bottle pattern 4 x 3 x 1 Carton style RSC Mfr. Joint ___ Glue ___ Staple ✓ Tape ___
Material - Body 200# TEST, "C" FLUTE
Partitions: NON-TEST Sizes: 3 Partitions 6-7 8" x 3-15/16" and 2 Partitions 9" x 3-15/16"
Top pad: NONE Size ___ x ___ Bottom pad NONE Size ___ x ___
Bundling pattern 2 x 1 x 3 No. of ties 2

PRINTING Special copy instructions SEE BELOW "Glass with care" SIZE #2
Ink colors: GCMI #34 & #37 Background of Logo GCMI #34, all other copy GCMI #37

PACKING To be packed ___ Necks up ✓ Necks down Palletized per spec. issued 9-9-59

Company Logo HORIZONTAL
Company Logo Length 6" CENTERED ON SIDE PANEL



2 TYPICAL CORRUGATED SPECIFICATION: blank layout showing position and color of printing. Also included: size, board test, and board flute of outer case; partitions, liners, pads cell size and partition arrangement. Sheet is designated by commodity number of bottle and date of issue.

Rule 49 of the same code governs experimental or test shipments. "For the purpose of determining the merits of boxes not specifically provided for in Rule 41, rail carriers permit experimental and test shipments of articles in corrugated and solid fibreboard boxes not complying with Rule 41, and without assessment of increased charges."

Rule 5 (Motor Carrier Regulations and Container Specifications) deals with packing requirements of the common motor carriers. Section 2, detailing requirements for articles in glass or earthenware, is of particular interest to users of corrugated and solid fibreboard boxes.

Rule 18 (Official Express Classification No. 36) of the Railway Express Specifications and Regulations covers the construction and closure of corrugated and solid fibre shipping containers for railway express shipment.

Federal and Military Specs. The military services and other departments of the federal government prescribe specs for fibre boxes purchased directly or used by suppliers for shipments to government activities. You should review the various federal and military specifications for glass-packed items destined for government agencies before beginning to write such specifications for your products.

Parcel Post. Federal regulations governing parcel post shipments, particularly sections relating to packages (Part 121), nonmailable matter (Part 124), mailable matter under special rules (Part 125) which includes adequacy of preparation and packaging, and fourth class mail (Part 135), and air mail (Part 136) restrictions should be reviewed in developing specs for solid or corrugated fibreboard shipping containers for glass-packed items intended for parcel post shipment.

These rules and regulations spell out in detail such factors as bursting strength, maximum gross weight, maximum inside dimensions, minimum weights of packaging components, facings, and other requirements of solid or corrugated fibreboard containers. Articles tendered for transportation —not complying with the applicable rules and regulations—are refused for shipment.

Reshipper Specs

The corrugated specification is usually in the form of a blank layout showing the position and color of printing, as illustrated in Fig. 2. This part of the specification includes the size, board test, and board flute of the outer case; partitions, liners, and pads, as well as cell size and partition arrangement. Usually all this information appears on a corrugated specification sheet designated by the commodity number of the bottle and the date of issue.

You can develop these specifications by three principal means:

1. Recommendations of the glass supplier based on its experience with the same bottle supplied to other users.
2. Your own experience with a similar bottle.
3. Testing various case designs against that of a standard bottle which has been proved acceptable.

PURCHASE SPECIFICATIONS

We are now ready to write our purchase specifications. We need to include the following information:

1. Commodity number (identification).
2. Bottle size (capacity).
3. Glass type.
4. Bottle type.
5. Finish size and type.
6. Size and capacity of reshipper.
7. Pattern of bottles in reshipper.
8. Bursting strength.
9. Type of reshipper.
10. Corrugated specification date.

Remember, we have already approved suppliers drawings, stressed critical points, and given the purchasing department approved mold numbers.

The purchase specification for a 4-oz. wide-mouth tablet bottle might read like this:

> BT. 100 - 4 oz., amber, round, wide mouth, 38-400 finish. Reshipper for 12, pattern 4x3x1, size 9⅜x7x4 in., 200-lb. test, RSC, per corrugated specification dated 2/14/58.

The purchasing department should add to this specification the mold number of the supplier with whom it places the order.

Note the use of the commodity number (BT. 100) and the simplified corrugated specifications. Even though the corrugated specifications listed are incomplete, they serve to differentiate this bottle from others which might be identical except for reshipper specifications, i.e., 4-doz. pack, CSSC, etc.

NEW DESIGN SPECS

All of the preceding applies to the specification of a standard bottle design. When you are developing a new design or private mold bottle, you find some differences in techniques.

After choosing or developing the final design, both from esthetic and mechanical standpoints, have *all* glass companies selected to supply the bottle submit dimensional drawings. At this stage there should be no question regarding efficient filling on present equipment or proposed new equipment. The time to determine this was during the developmental stages.

All that remains then is to check the dimensions carefully, noting proposed tolerances. Again I would like to emphasize these are physical dimensions only and in no way reflect glass distribution. On a new design, let the glass supplier investigate glass distribution and report the findings and conclusions to you. Then have cold mold samples prepared. Although these are not conclusive, they point out any flagrant trouble spots and serve in the final development of packaging equipment and test runs.

New Design Problems

The big problem with a new design glass bottle is simply that no truly representative glass samples are available until the supplier makes a major production run. This leaves a loophole for trouble to creep into the package.

Reshipper specifications usually require developing before initial glass runs are made since the glass supplier must have something in

RONDO®
"the pack with the built-in shock absorber"
Holds and protects inserted items by the spring-clip action of its fluted partitions.
The restricted opening ① and the spaces between ② and beneath ③ are the basic elements of this unique package.
Applications for various articles from ⅛" to 1¼" diameter for many industries.
SOME OF THE RONDO STYLES
RONDO OF AMERICA, INC.
100P SANFORD STREET, HAMDEN 14, CONN.

SALES MAKERS...

Blister Packages of Butyrate Sheet

Shoppers for tools are like shoppers for most things... they reach for merchandise that's quality-packaged to stay factory-new, and clearly displayed for a close look—important factors in self-service. With this thought in mind, Fuller Tool Company began blister-packaging its pliers in sheet extruded of tough Tenite Butyrate... and sales almost doubled.

Notice how the blisters have been formed to fit the different sizes and shapes. The sturdy, transparent Butyrate plastic sheet keeps the pliers snugly in place, protected, and clearly visible. You can read every word on the cardboard backing.

Packaging is fast. The side edges of each sheet are firmly creased and folded under about ¼-inch. With pliers cradled in the blister, the cardboard is simply inserted into these grooves. Opening is just as fast —the resilient sheet can be slipped right off, permitting a prospective buyer to get the "feel" of the tool.

Sheet of Butyrate keeps its high gloss despite rough and frequent handling, and has the strength to hold contents of considerable weight. Yet it is readily heat-softened and deep-drawn to intricate shapes by thermoforming—a fast, low-cost process. And blisters may be easily applied to backing cards by means of heat sealing, as well as by stapling or flange-fit.

These advantages make blister-packaging with Tenite Butyrate popular for small things that have to be kept together... heavy things that have to be kept in place... delicate things that have to be protected... pretty things that have to be shown... a host of things a shopper wants to get exactly as packed at the factory.

For more information about packaging with Tenite Butyrate, write EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

TENITE®
BUTYRATE
an Eastman plastic

Pliers manufactured by Fuller Tool Co., New York 67, N. Y.; blister-packaged in sheet of Tenite Butyrate extruded by Joseph Davis Plastics Co., Kearny, N. J., and thermoformed by Plaxall Inc., Long Island City, N.Y.

which to transport the new design.

In addition, the user's sales organization usually puts a tremendous amount of pressure on suppliers to meet a certain date for introducing the new package. Too often this pressure to meet a deadline results in inadequate testing of both bottle and reshipper before release. It is paradoxical that "Although there is never time to do a thing right, there is always time to do it over!"

The risk of breakage in shipment of dry-filled bottles or small liquid-filled bottles is slight, and a little common sense will usually provide good packaging. If, however, you are packaging over 12 oz. of liquid in glass, watch out! The combination of considerable weight with considerable hydraulic shock can be dangerous.

STEPS TO NEW DESIGN

The following is an ideal way to develop shipping containers for a brand new design bottle of large liquid capacity.

1. After completing all preliminary work, give the glass supplier an order for the smallest quantity of glass containers which that company feels would be enough to get uniform or representative manufacturing conditions. Be prepared to accept these bottles packed in service containers.

2. Establish a timetable that permits adequate testing and development of corrugated reshippers by the glass supplier—before you need your new bottles.

3. If the new bottle shows any unsuspected weak points, minor design revisions can be made to correct them on future runs. This may mean scrapping the first run or using special corrugated cases to utilize these bottles.

4. Assuming glass distribution is adequate and needed changes are minor, proceed to develop and test reshippers:

(a) Test various case designs against that of a standard. You should choose for comparison purposes a bottle-case combination with minimum acceptable shipping performance.

(b) Select the most economical shipping case design meeting or exceeding the shipping performance of the comparison bottle-case combination.

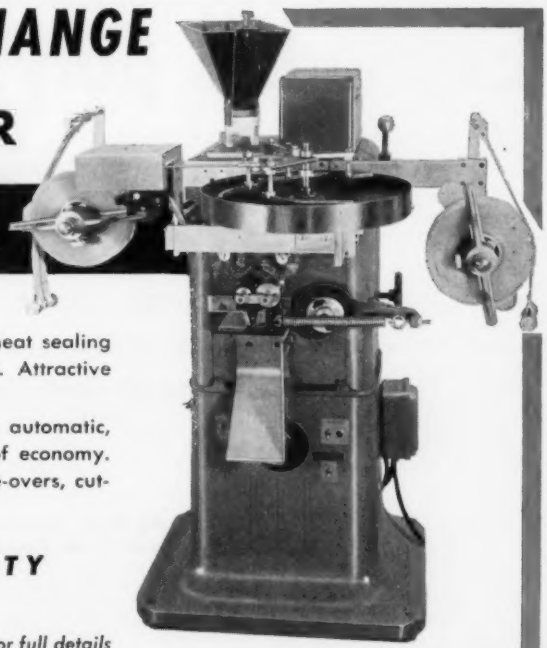
5. After developing the reshipper, have the glass supplier repack the initial run in the reshipper or, depending on time and economics, pack the filled containers into the reshippers.

This procedure costs a little money at the beginning but should pay dividends in reducing complaints and ulcers. It requires only one thing: the full understanding and cooperation of the user's sales organization to postpone introduction of the new bottle until after adequate testing.

There is no mystery about the specification of a glass container for in the final analysis we ask for only one thing—performance. This should be our single criterion for establishing glass container requirements. *(End)*

NEW QUICK CHANGE TABLET PACKAGER

FAST — ECONOMICAL
IDEALLY SUITED FOR SHORT RUNS



For tablets and capsules — all sizes. Use most heat sealing materials. Capacity — 250 tablets per minute. Attractive packages — in strips or singles.

The new Quick Change tablet packager is an automatic, medium speed machine featuring a maximum of economy. The versatile design provides simple, fast change-overs, cutting costly down-time and increasing efficiency.

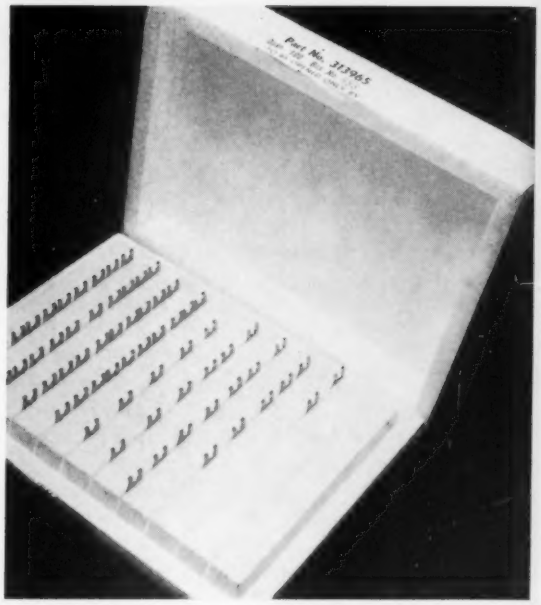
FLEXIBILITY • RELIABILITY

wrap-ade SINCE 1932

Investigate —
Send product samples for full details

MACHINE CO., INC.

188 SARGEANT AVENUE • CLIFTON, NEW JERSEY • PRESCOTT 3-6150



EXPANDED POLYSTYRENE CONTAINERS prevent scratching of valve parts (nozzles at left, flappers at right) whose smoothness and flatness must be measured in light bands; also, package provides easy loading and use-out.

Expanded polystyrene package for precision parts

Molded package eliminates all possibility of scratches on surfaces of steel parts lapped to rigid specifications of smoothness and flatness

By W. J. Semmerling, *Process Engineer*
and C. M. Russell, *Packaging Engineer*
Minneapolis-Honeywell Regulator Company
Morton Grove, Illinois

LOAD OF ABOUT 40 lb./sq. in. was applied to package (left photo). Although it distorted package, it imparted no damage to parts inside. Note depressions inside package cover (right) made by nozzles.

Development of a molded expanded polystyrene package for tiny precision valve nozzles and flappers—two important components of our pneumatic relays—led us to a package which eliminates all possibility of scratches on these parts. Molded to our rigid specifications, this expanded polystyrene holds its shape indefinitely.

When we were ready to start producing our pneumatic relays, we were faced with a packaging problem: how to protect the valve nozzles and flappers from the time they are manufactured until they are assembled in the pneumatic relays. The reason for this problem was that the valve parts are lapped by an outside vendor and shipped to our assembly plant.

Valve Seats Critical

To make one "valve" (each relay requires two), the flapper, a small flat piece of steel, is spring-loaded over the opening in the nozzle and rests on the concentric seats around this opening. Seating must provide a seal with a maximum leakage of 40 standard cc./min. at 15-p.s.i.g. air pressure. To accomplish this, each seat face of the valve and flapper must have a smoothness and flatness measured in light bands. The seat surfaces must be absolutely free of scratches.

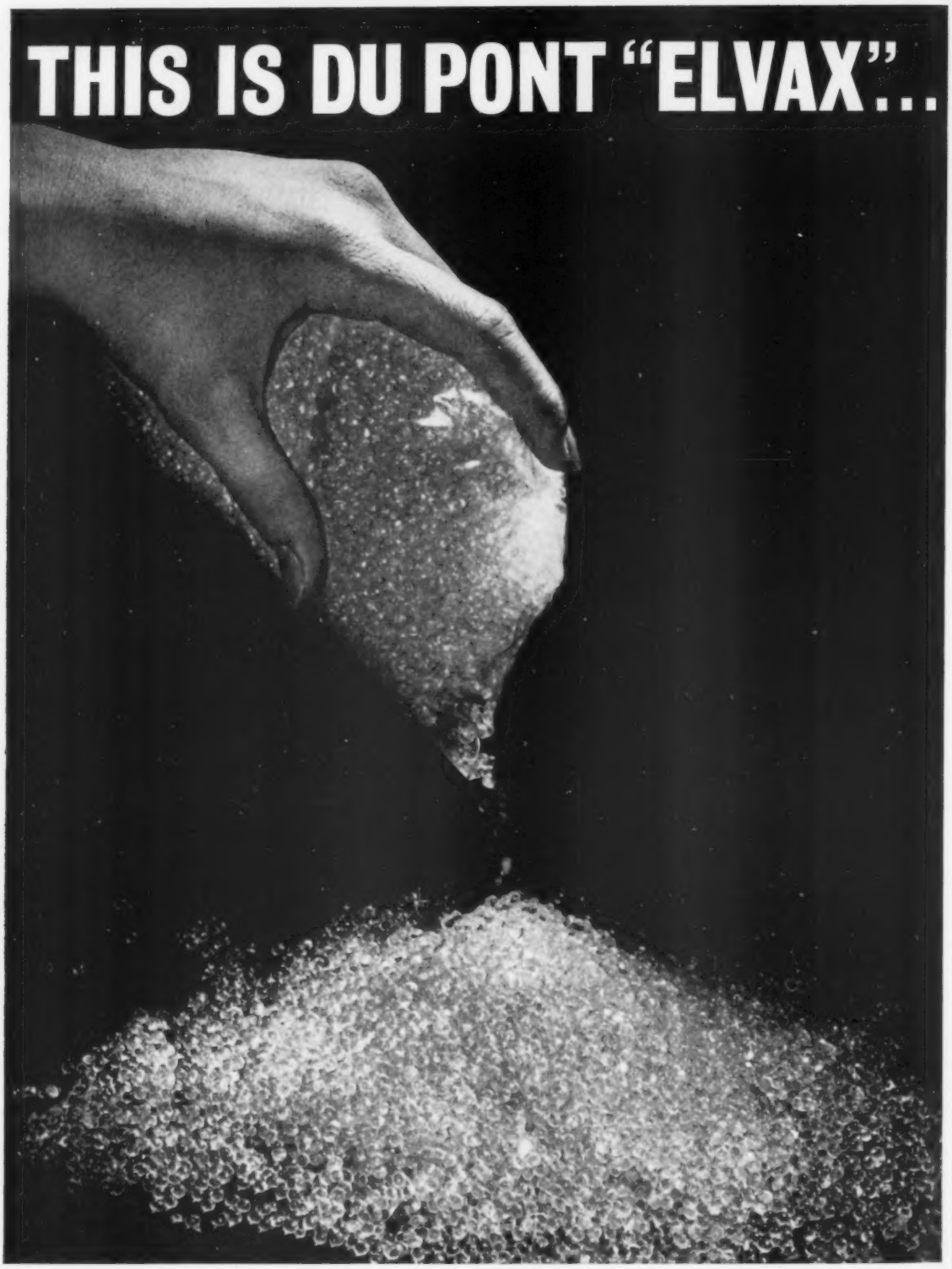
Made of stainless steel, each part is lapped to the close tolerances we require. After lapping, it is imperative that they not touch one another or scratches can occur. This means that each part must be packaged *immediately* after it is lapped—we cannot use tote trays, or the like, as any such method would scratch the valve parts and cause them to function improperly. Thus, another problem was the fact that packaging of these parts had to be done by the machinist; that is, after lapping the part, he must put it directly into the package.

We investigated packaging the parts individually in small plastic pouches or envelopes. An operational fault with this type of package was the time needed for the

W. J. Semmerling is a graduate of Northwestern University Technological Institute with a B.S.M.E. degree. He joined Minneapolis-Honeywell after graduation and served as a liaison engineer before joining the newly formed process engineering section in 1958.

C. M. Russell attended Ramsey Institute of Technology and University of Minnesota. He joined Minneapolis-Honeywell in Minneapolis in 1935 as methods engineer. Before becoming packaging engineer in 1959, he also served as wage and salary administrator and personnel manager in Chicago.

THIS IS DU PONT "ELVAX"...



"ELVAX" vinyl resins are translucent, free-flowing pellets that blend readily with wax to form strong, flexible coatings for a wide variety of packaging materials. "Elvax" is easy to apply by hot-roll, curtain or solvent-coating techniques.

a new vinyl resin that gives wax greater versatility in packaging

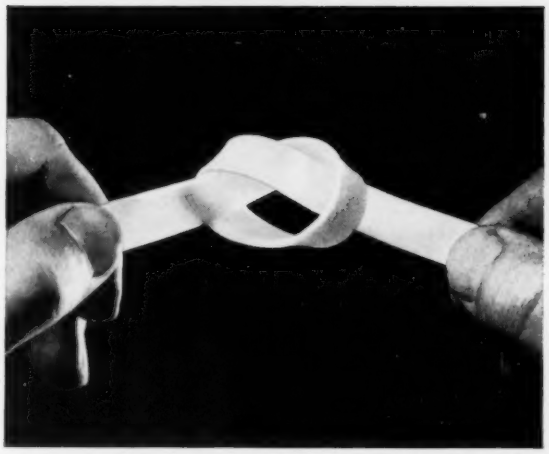
"Elvax" is a new, high-molecular-weight vinyl resin that makes possible low-cost wax coatings of superior adhesion, flexibility and toughness with excellent water-barrier properties.

With "Elvax" you can, for the first time, control the water-vapor transmission rate (WVTR) of wax coatings simply by varying the ratio of "Elvax" to wax. As little as 5% of "Elvax" added to wax reduces the creased WVTR of unmodified wax coatings by 50% without impairing the flat WVTR. In addition, resistance to grease penetration is improved significantly. When 40% "Elvax" is blended with wax, flexible 1-mil coatings with flat and creased WVTRs of 0.2-0.4 gms./100 in.^{2}/24 hours are obtainable.

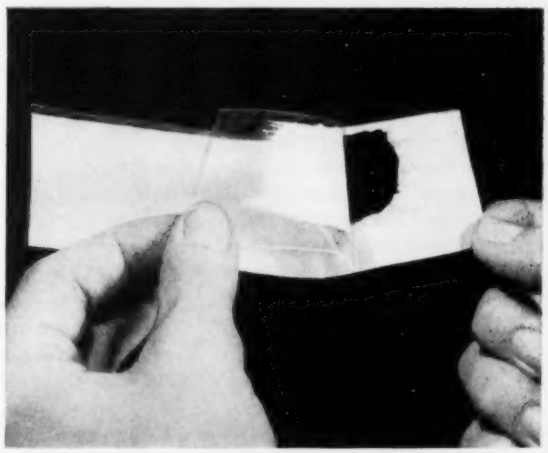
You can obtain tough, flexible adhesive bonds using "Elvax" alone or combining it with waxes, resins, rosins and rosin derivatives. "Elvax" exhibits strong adhesion because of the chemically active polar groups in its molecules. Flexibility and toughness (see upper right) result from its rubber-like, noncrystalline structure and high molecular weight. Hot-melt, solvent and pressure-sensitive adhesives based on "Elvax" adhere tightly to all films used in packaging today (see right).

Since "Elvax" will be used in food packaging applications, Du Pont is currently completing a nineteen-month study which will be used to petition the FDA for permission to use "Elvax" where contact with food is concerned.

"Elvax" is now available in experimental quantities for your evaluation. Our new booklet on "Elvax" provides information on properties and application methods . . . suggests possible uses. Write: Du Pont, Electrochemicals Dept., Vinyl Products Division, Room N-2533, Wilmington 98, Delaware.



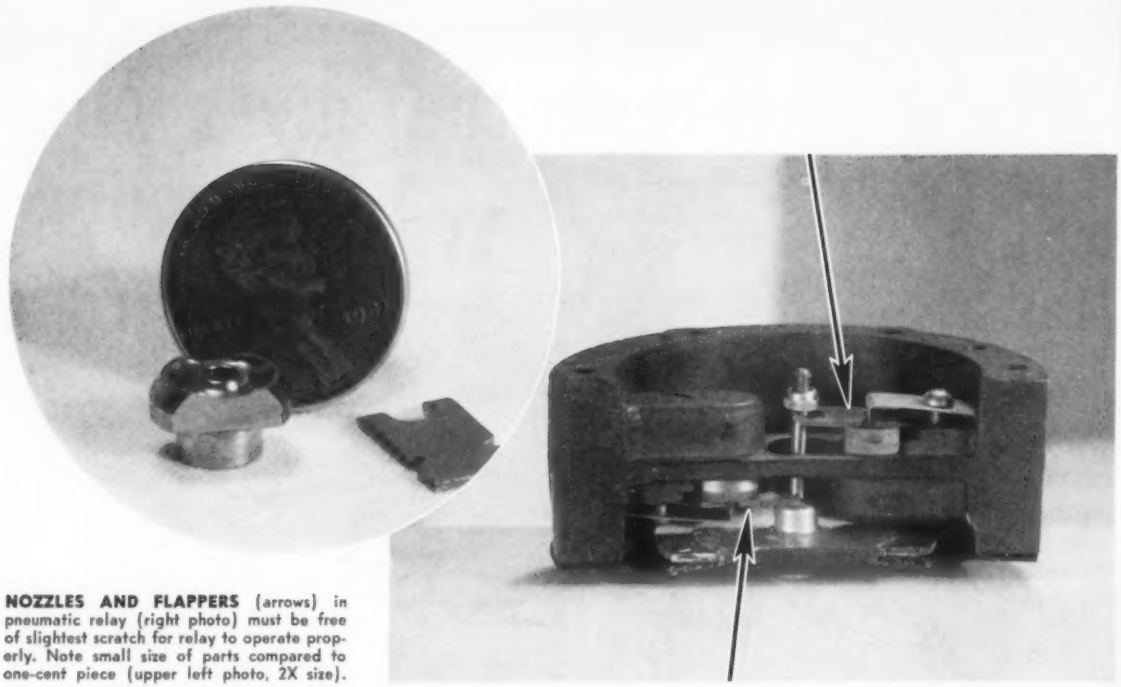
FLEXIBILITY is demonstrated by tying a strip of paraffin wax, blended with 40% "Elvax", into a knot. When "Elvax" is added, the strip becomes plastic...will take 50% elongation before it breaks . . . is flexible at –20°F.



ADHESIVE STRENGTH of wax extended with 40% "Elvax" is shown by the fiber-tearing bond obtained when paper coated with "Elvax"/wax is heat-sealed to polyethylene. Coatings based on "Elvax" heat-seal to all films used in packaging today.

DU PONT
REG. U. S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

"ELVAX"
VINYL RESINS



NOZZLES AND FLAPPERS (arrows) in pneumatic relay (right photo) must be free of slightest scratch for relay to operate properly. Note small size of parts compared to one-cent piece (upper left photo, 2X size).

machinist to slip the part into the pouch and seal it.

Idea From Blackboard Eraser

The common blackboard eraser, so familiar in schoolrooms, put us on the road to our present package. Since the flappers are flat, we found that we could slip them easily between the layers of the eraser. In the slots, the flappers line up nicely and their lapped surfaces do not touch one another. The felt of the eraser is not the most "scratchless" material, but we were satisfied with the basic structural idea of the slots.

Working with Polyfoam Packers Corp. Div., Glo-Brite Foam Plastics, we developed our present package of expanded polystyrene having a density of 3 lb./cu. ft. The bottom half of the package for the flappers has 10 slots and is designed to normally hold 100 flappers. By spacing the flappers closer together than we usually do, we can get over 100 in one container.

The container bottom for the nozzles has 100 holes (arranged 10 by 10), each of which holds one nozzle. The size of these holes is such that the nozzle stems fit easily yet firmly. When the nozzles are in place in the bottom, their delicate surfaces point upward.

Material Does Not Scratch

We designed the covers for both packages to rest lightly on the parts. Thus, the cover for the flappers holds them down in the slots, preventing any movement of these parts during handling.

When the cover is in place on a package of nozzles, it rests on the lapped seat surfaces. However, due to one of its characteristics, the expanded polystyrene does *not* scratch the precision faces. The covers of both packages fit snugly and keep the inside of the closed package free of dust.

We use pressure-sensitive labels to seal the packages shut. The labels are printed for identification, thus serving a dual purpose.

To get some idea of how much weight one of these packages supports, we drove a 2500-lb. electric lift truck over a sealed, partially filled container. Although this distorted the box to some degree, there was *no* damage to the parts within. We estimated that the truck exerted a load of about 40 lb./sq. in. on the package.

Package Easy To Use

To pack these containers, the machinist has the bottom half of the container near his work area. As he finishes lapping a batch of parts, he cleans each part and places it directly into a slot (or hole). After a package is filled, he closes and seals it, preparatory for shipment to our relay assembly plant.

Having each box (for both flappers and nozzles) contain 100 parts relieves our stock boys of hand- or weight-counting parts to fill an order, thus a time saver. The packages are lightweight and easy to handle.

Another important advantage of this type package over others, such as small envelopes, is its use-out feature. In our relay assembly operation, the operator has a container of nozzles and one of flappers at her work area. It is convenient and easy for her to select the parts when assembling a relay.

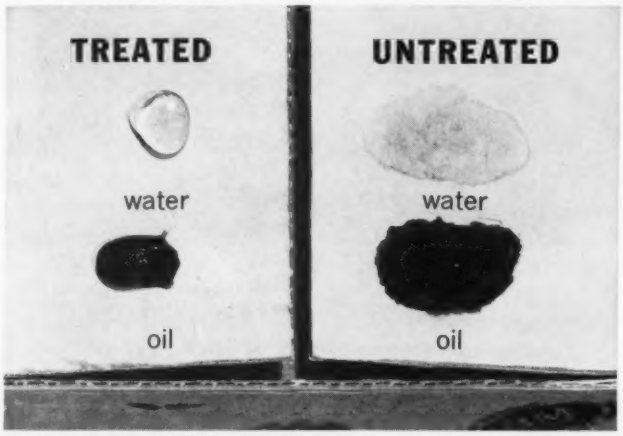
(End)

3M COMPANY CHEMICALS

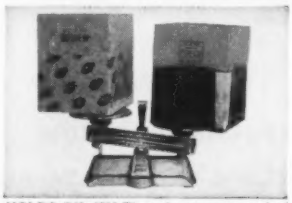
THE RAW MATERIALS OF PROGRESS

PACKAGE SOAK-THROUGH STOPPED!

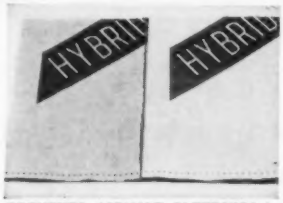
New paper protector sheds oil, water . . . tames wax, asphalt . . . ends wicking, bleed!



3M BRAND PAPER CHEMICAL FC-805 gives paper packaging materials the ability to repel water, oil, grease, many chemicals. Demonstration shows dramatic difference FC-805 makes—photo was taken 30 minutes after oil and water were applied to treated and untreated flaps. FC-805 also prevents unnecessary wax penetration on wax papers—permits thinner applications of polyethylene on poly-coated wraps. And look at these four demonstrations of how FC-805 protects packages . . .



HOLDS OIL IN! These boxes were packed with oily sweeping compound, then tested for 48 hours at 110-120°F. Sweeping compound was then removed. Box treated with FC-805 (left) absorbed no oil, while untreated box (right) soaked up 13% of compound's oil.



PREVENTS ASPHALT BLEEDING! In tests, seed bags, represented by swatches illustrated, with asphalt-laminated outer plies traveled world-wide, experienced severe handling and weather. FC-805 prevented asphalt bleeding (right), compared with typically stained untreated bag (left).

KEEPS OIL ON PRODUCT! For a twine manufacturer, FC-805 keeps oil on the baler twine—prevents penetration of wrapper. Untreated wrapper (left), treated one (right) show dramatic difference after long storage.

HALTS WICKING! These parts envelopes were filled with 300°F., oily sand. After four hours at 260°F., oily sand did not wick through treated envelope (left), but seriously damaged untreated envelope (right).

PROPERTIES PROFILE

3M Brand Paper Chemical FC-805

Paper Chemical FC-805 is a water-soluble fluorochemical designed for application on the paper machine. As it dries, a chemical reaction converts it from a water-soluble material to a water-resistant, insoluble, non-volatile material that penetrates individual fibers. This imparts grease and oil resistance, a high degree of water repellency, and effectively holds out molten wax, hot asphalt, lacquers and varnishes, without filling the pores of the paper.

OIL RESISTANCE

Type of paper	Oil Resistance (days)			
	Corn Oil	Lard Oil	Peanut Oil	Light Wt. Mineral Oil
30# Bl. kraft, moderately beaten, Flat Test Treatment Level (wt. %) 0.25	5	4	4	4
30# Bl. kraft, lightly beaten, Creased Test Treatment Level (wt. %) 0.5	21	14	21	21
15 pt. Semi-Bl. kraft board, Scored & Folded Test, Treatment Level (wt. %) 0.3	5	5	5	10

Since FC-805 achieves grease, oil and wax resistance without the formation of a continuous film, the porosity of paper and board to moisture vapor and other gases is not affected . . . nor will it have an adverse effect upon strength, provided a material such as urea is incorporated in the formulation. In fact, FC-805 will not affect, to any major degree, the color, flexibility, printability, glueability, or porosity of paper.

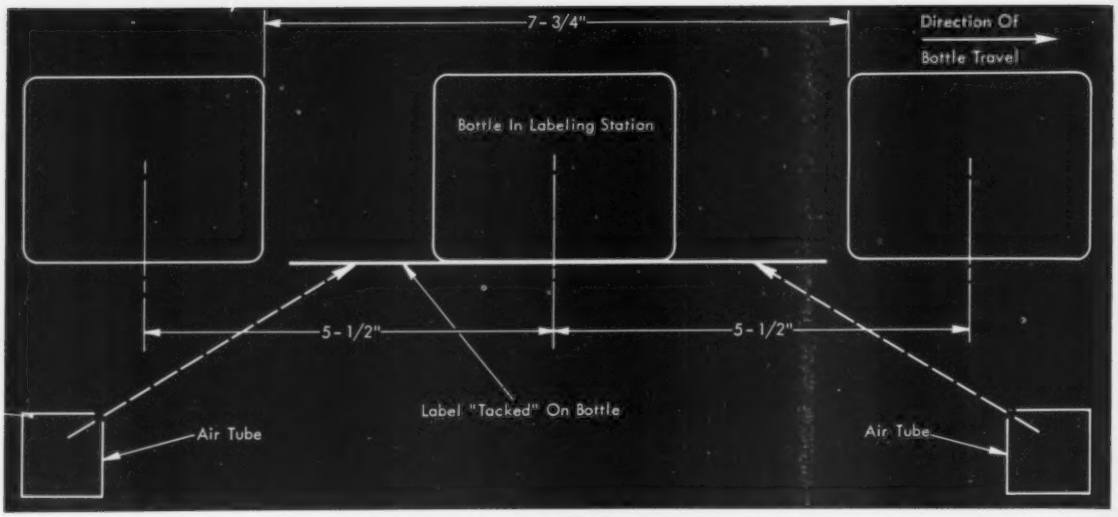
Free booklet on 3M Brand Paper Chemical FC-805. Send for our booklet on the subject, or write, describing your area of interest, to 3M Chemical Division, Department KCA-71, St. Paul 6, Minn.

CHEMICAL DIVISION

MINNESOTA MINING AND MANUFACTURING COMPANY

. . . WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY



NO ALTERATION TO BOTTLE SPACING in labeler for round bottles was needed to apply 7¼-in.-wide labels to square ones—this size label, sufficient to cover three sides of square bottle, clears bottle at either side by about ¼ in. Air (broken arrows) blows ends of labels around bottle sides.

Labeler for round bottles labels square ones

Conversion cost: under $500—equipment now labels three sides of square bottle at same speed.

By Charles R. DeSpain
Vice President and General Manager
Heaven Hill Distilleries, Inc.
Bardstown, Kentucky

Converting labeling equipment originally made for round bottles to apply labels to square bottles is not as difficult as you might imagine. We did this some time ago when we decided to adopt a square-style whiskey bottle for fifths, with a label that covers the front and the two sides of the bottle. Our problem: how to perform this labeling operation at minimum cost using the equipment we had for round bottles.

Made Thorough Study

We first made a thorough study of the labelers, the proposed label and bottle, and various possible label sizes. As a result of this study we came up with the following facts: *(Turn page)*

A major change to a packaging machine may look like an expensive proposition. But with a little ingenuity, the people at Heaven Hill proved this is not necessarily so. Mr. DeSpain tells how they revamped two labelers when the company changed from round to square bottles.

PROBLEM: How to get sales appeal in your shipping container without the cost of three-color printing.

SOLUTION: International Paper's new *pastel* Gator-Hide® linerboard gives you *three* colors with two-color printing.

THIS DISPLAY container was made with two-color printing—on one of International Paper's new Gator-Hide pastel linerboards.

These amazing new linerboards are the lightest and brightest you can get without printing color on expensive bleached board.

They are typical of the wide range of fine linerboards available to you in the famous Gator-Hide series. Their purpose: *better* packaging at *lower* cost.

Other examples include non-abrasive boards, release-coated boards, weather- and slip-resistant boards and highly printable coated linerboards.

But our work goes beyond the creation of new boards. Packaging experts in our Container Division study the special needs of *your* product. They start with the best materials for the job. And then turn them into rugged—yet lightweight—shipping containers that deliver your product in *top selling condition* at minimum cost.

International Paper can provide you with paper packaging that is designed *—from the very beginning—*to suit your product.

Call any one of our twenty-two Container Division plants. Or contact your boxmaker. He has probably been doing business with us for years.

INTERNATIONAL PAPER

NEW YORK 17, N.Y.

Manufacturers of papers for magazines, books and newspapers • papers for home and office use • converting papers • papers and paperboards for packaging • shipping containers • folding cartons • milk containers • multiwall bags • grocery and specialty bags and sacks • pulps for industry • lumber, plywood and other building materials

1. A label 4¼ in. high and 7⅛ in. wide was necessary for the particular bottle. This size was in proper proportion to the bottle size.

2. The glue applicator rolls on our one- and two-station Economic World labelers were wide enough to cover a label width of 7⅛ in.

3. The labels could be "tacked" to the front of the bottles in the conventional manner; that is, with no changes to the equipment.

4. The size of the label magazine on the equipment could be altered to accommodate the larger label.

5. The bottles are 3¼ in. wide, and as they move through our equipment, there is 5½ in. between bottle centers. Therefore the distance between *alternate* bottles (the sides closest to one another —not centers) is 7⅛ in. Thus, when the 7⅛-in.-wide label is centered on the front side of the bottle in the labeling station, there is a clearance of about ¾ in. between either end of the label and the bottle on either side.

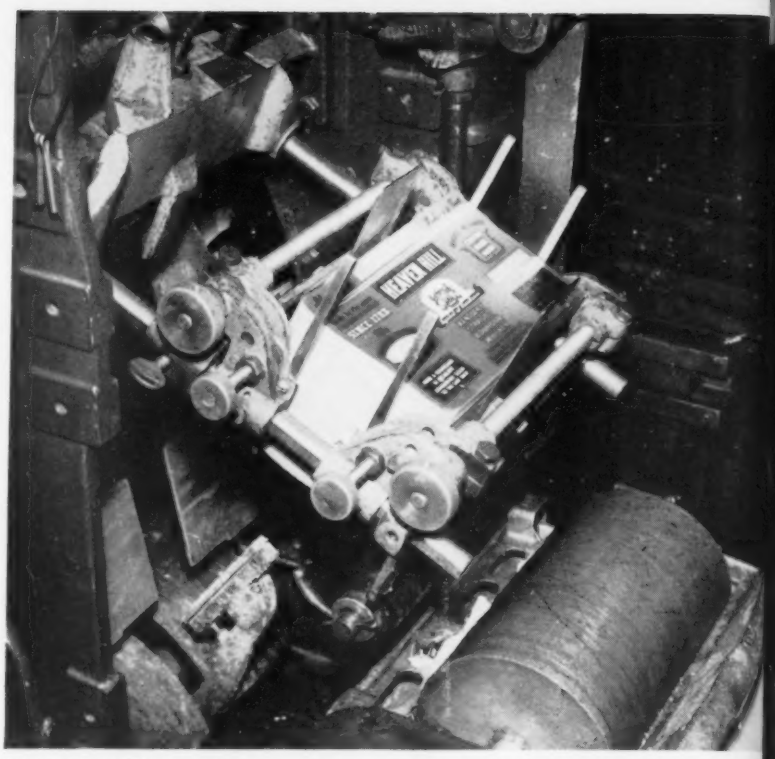
With these facts established, two major tasks faced us: (1) providing a means of pushing the loose ends of the label around and onto the bottle sides, and (2) providing the right kind of wiper pads for pressing and smoothing out the label ends on the sides of the bottles.

Use Air Blast

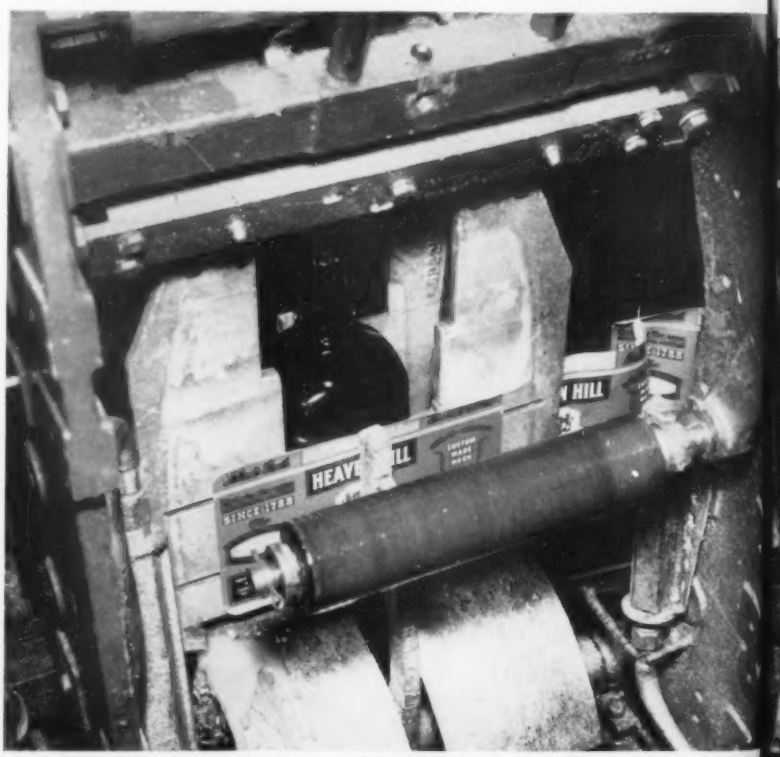
We found that a blast of air directed at each end of the label after it was tacked onto the front of the bottle was enough to blow the end back around the side and make it adhere to the bottle. To do this we fabricated two hollow tubes for each labeler.

Each tube is about 1 in. square by 6 in. long and has a narrow slit running longitudinally along one edge. The tubes are mounted vertically approximately 2 in. from the front side of the bottle traveling through the labeler.

They are spaced about 12 in. apart; each is about 6 in. from the center of the path through which

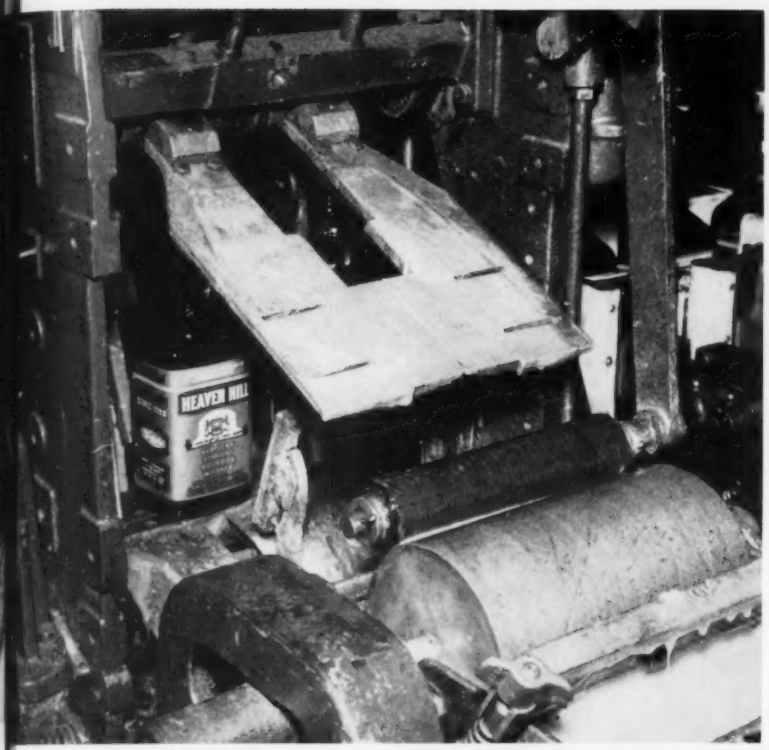


LABEL MAGAZINE was altered easily to accommodate wide labels for square bottles and . . .



IN CONVENTIONAL MANNER, machine picks up label and applies adhesive to it, then . . .

Charles R. DeSpain is a graduate of University of Louisville's Speed Scientific School with a B.S. degree in chemical engineering. Before joining Heaven Hills in 1945, he was associated with other independent distilleries in a technical and managerial capacity. Mr. DeSpain is a member of American Institute of Chemical Engineers and is a licensed professional engineer in the State of Kentucky.



GLUE ROLLS needed no change as they are big enough for label (magazine removed) . . .

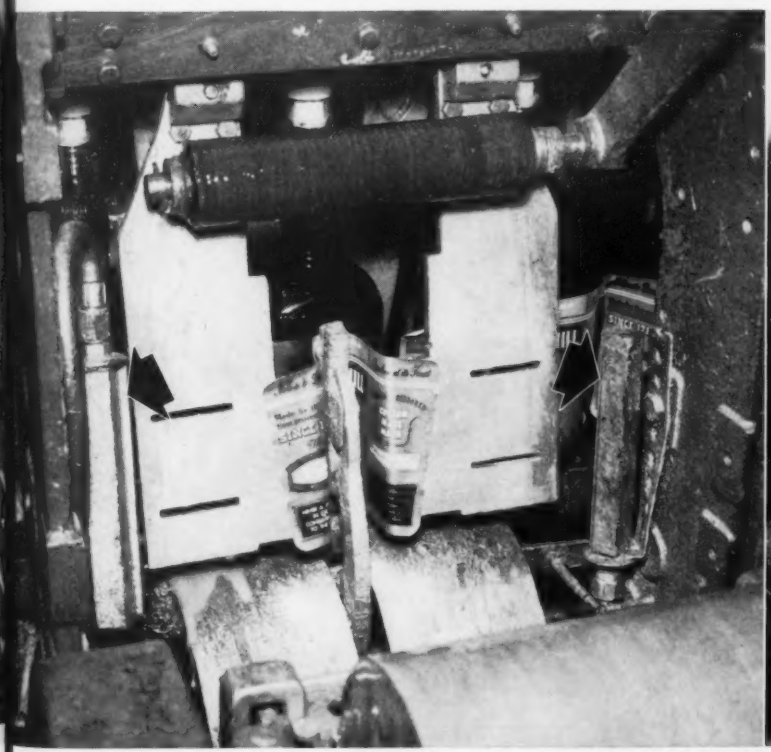
the label is carried from the magazine to the bottle.

Each tube is positioned so that the air blast coming from the narrow slit is directed at a point approximately halfway between the free end of the label and the point at which the label folds around the front corner of the bottle.

A solenoid air valve, actuated by a cam-operated Micro Switch, controls the blast of air, which lasts a little less than a second immediately after the label is first tacked to the front of the bottle. We manually adjust the amount of air pressure so that it is just enough to blow the label ends around the sides of the bottle.

Build U-Shaped Wiper

In working out the method for wiping the label ends onto the bottle, we had to keep in mind that there was limited space on either side of the bottle at the wiping stations—approximately 2¼ in. We solved this problem by building a



LABEL IS TACKED ON, after which air from tubes (box arrows) blows ends around bottle.

NARROW SLIT (arrow) in tube directs air.

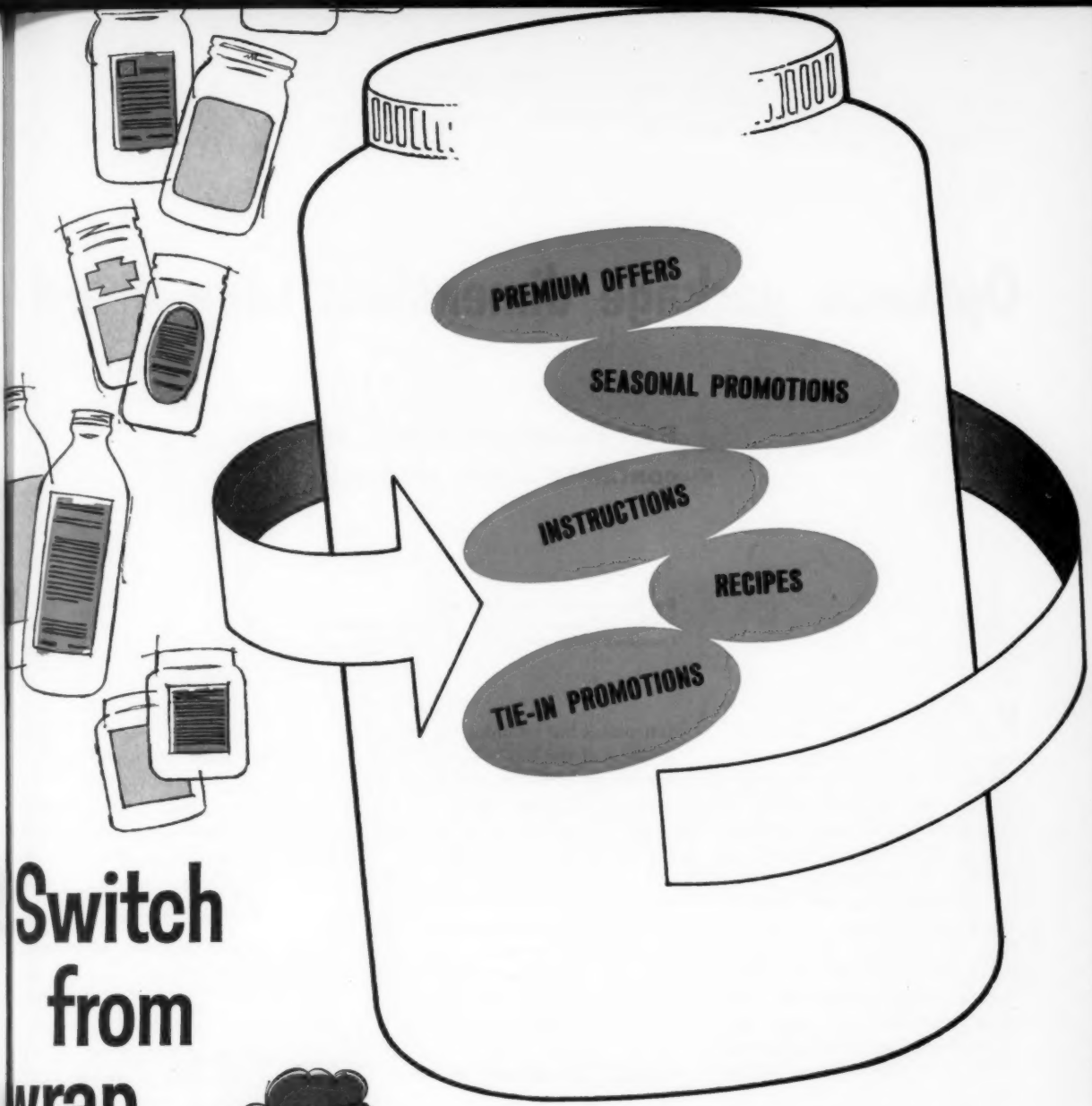
U-shaped form which is padded and fits the square shape of the bottle.

This wiper mechanism fits into the third wiper position of the machine and operates back and forth in the horizontal plane the same as the regular wiper pads do. Essentially it consists of two L-shaped metal forms, mounted facing one another. Each is anchored at its corner so it will pivot through an arc of approximately 10°. Padded on their inner sides and spaced to fit the width of the bottle, these L's form the U-shaped pads.

The mechanism is spring-loaded so that its normal position is open; that is, the two long legs are deflected away from one another. As the unit moves forward to the bottle, the short leg of each L presses against the front of the bottle. This pressing action causes the two halves of the U to pivot, which, in turn, forces the long legs against the sides. This simultaneous action wipes both ends of the label onto the bottle firmly and evenly, resulting in good adherence.

At no sacrifice in speed, we converted two labelers in this manner —a one-station and a two-station machine. The total cost of conversion was under $500 for the two-station equipment; under $300 for the one-station. And we can easily change either machine back to handle round bottles. *(End)*

U-SHAPED WIPER, in third wiper station, wipes label ends on bottle sides. Consisting essentially of two L-shaped forms facing one another, it operates in limited space. As mechanism moves toward bottle (A), short legs of L-forms touch bottle front which causes long legs to press against bottle sides (B), wiping label ends. Note details of mechanism (C).



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Optimum package dimensions save board

Part II—How to decide between container styles or designs

By George G. Maltenfort
Technical Director, Container Division Laboratory
Container Corporation of America, Chicago

For every package there is a combination of dimensions that minimizes the material required to enclose the specified volume. In Part I, Mr. Maltenfort presented a general method for solving the problem of finding this optimum set of dimensions and gave examples of minimum board area formulae for common corrugated boxes and cartons. He also showed how to integrate minimum board area considerations with other package requirements such as container performance and appearance.

In Part II, Mr. Maltenfort illustrates a technique for deciding between styles or designs and shows the effects of interchanging dimensions or adding a stitch flap on board area requirements.

CHOOSING BETWEEN STYLES

We can best illustrate this technique by solving two exemplary problems:

1. Given a particular size regular slotted container (RSC), what would be the effect on board area of: (Example A) interchanging all dimensions but retaining the general shape of the box? (Example B) interchanging length and depth so that $W_1 < D_1$ and $L_1 < D_1$? (Example C) adding a 1.5-in. stitch flap to the box in Example B?

2. For certain box sizes, a double cover container uses less board area than the corresponding RSC; for others the reverse is true. How can you determine simply when a given size uses less board area in one style than in another?

RSC (Example A): $W_1 > D_1$

First consider an RSC whose width exceeds its depth. By interchanging all of the dimensions you can effect a saving in board area. For example, mark the dimensions of the original container by a subscript "1" and the new dimensions by a subscript "2", making the following changes in the initial RSC dimensions:

$$L_1 = 16.0 \text{ in.} = D_2$$
$$W_1 = 11.0 \text{ in.} = L_2$$
$$D_1 = 8.0 \text{ in.} = W_2$$

Further, let

$$k_1 = 0.875 \text{ in. and}$$
$$k_2 = 0.75 \text{ in.}$$

where k_1 equals the sum of panel score allowances and k_2 equals the sum of flap score allowances.

Referring to Fig. 1, we see that the general formula for board area of an RSC is

$$A = \underbrace{(2L + 2W + k_1)}_{\text{(over-all length)}} \underbrace{(W + D + k_2)}_{\text{(over-all width)}} \quad (8)$$

By substituting the numerical values of $L_1W_1D_1$ and $L_2W_2D_2$ in this formula and subtracting, we get

$$A_1 = 54.875 \times 19.75 = 1083.78125$$
$$A_2 = 38.875 \times 24.75 = 962.15625$$
$$A_1 - A_2 = \text{Area saved} = 121.625 \text{ sq. in.}$$

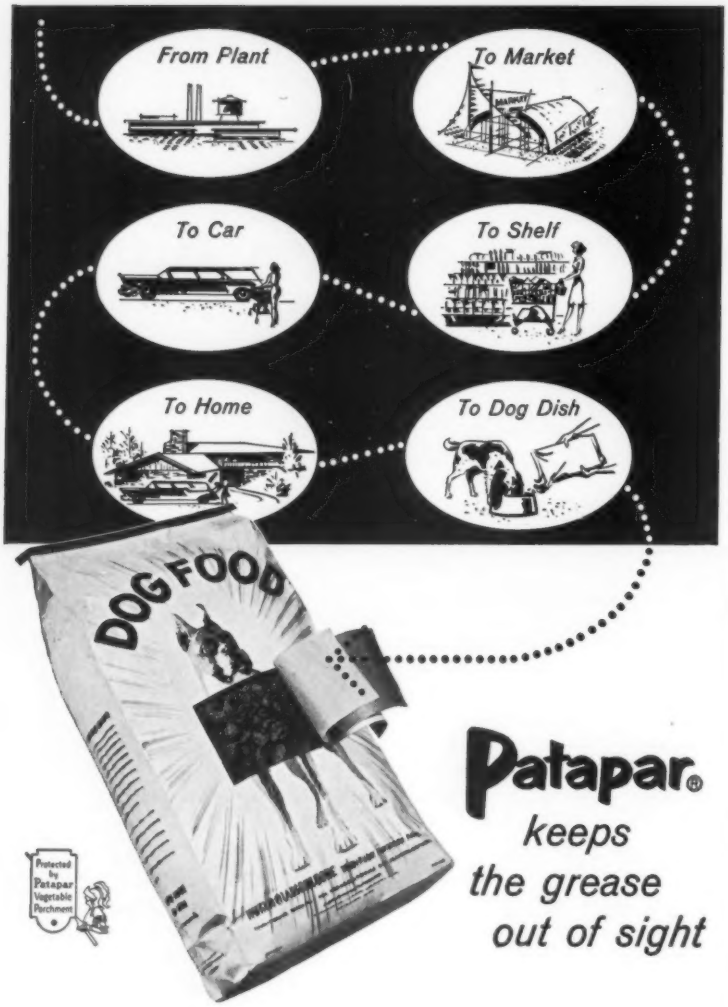
Thus, by interchanging dimensions as cited above, you get an 11 per cent saving in board area.

You can also use simple algebra to obtain an algebraic expression for the area of board saved. In the above case, where $W_1 > D_1$, the formula for area saved is

$$\text{Area Saved} = 2(W_1^2 - D_1^2) + 2k_2(L_1 - D_1) + k_1(W_1 - L_1)$$

Although this formula looks complicated, from a computational viewpoint it is actually easier to use than arithmetically calculating A_1 and subtracting A_2. *(Turn Page)*

5 NOMOGRAPH FOR DETERMINING DIMENSIONS OF RSC MAKING THE BOARD REQUIRED A MINIMUM



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RSC (Example B): $W_1 < D_1$ And $L_1 < D_1$

In this example, the dimensions of length and depth are interchanged, but no change is made in the width. Thus

$L_1 = 11.0$ in. $= D_2$
$W_1 = 8.0$ in. $= W_2$
$D_1 = 16.0$ in. $= L_2$
$k_1 = 0.875$ in. = sum of panel score allowances
$k_2 = 0.75$ in. = sum of flap score allowances

By the same process as used previously, we derive the algebraic formula for area saved, and in this example it turns out to be

$$\text{Area saved} = 2k_2(L_1 - D_1) + k_1(D_1 - L_1)$$

This example is interesting for two reasons, one practical and the other theoretical.

From the practical point of view, this formula makes it apparent that the amount of board saved by this change—if there be a saving at all—will be relatively small. When we have a taped box, the scoring allowances are such that $2k_2$ exceeds k_1, so that instead of giving a positive saving of a few square inches, the proposed change actually results in a small penalty of a few square inches:

$2(0.75)\ (11 - 16) = -\ 7.5$
$0.875\ (16 - 11) = +\ 4.375$
Difference $= -\ 3.125$ sq. in.

This appears to contradict our universal rule that the most favorable combination of dimensions is the one in which the width is exactly one-half the length. According to this rule, 16x8x11 in. ought to be better for $LxWxD$ than 11x8x16 in. This brings us to the theoretical reason we mentioned previously.

The rule is derived with mathematical rigor and is correct. However, the derivation treats the box blank area from a two-dimensional point of view. Since a blank of corrugated board has thickness as well, it is necessary to add allowances for scoring so that the inside dimensions come out as speci-

EXAMPLE: V=100 cu.in.; a=47

KEY $L\text{-}1\sqrt[3]{\frac{V}{4a^2}}$

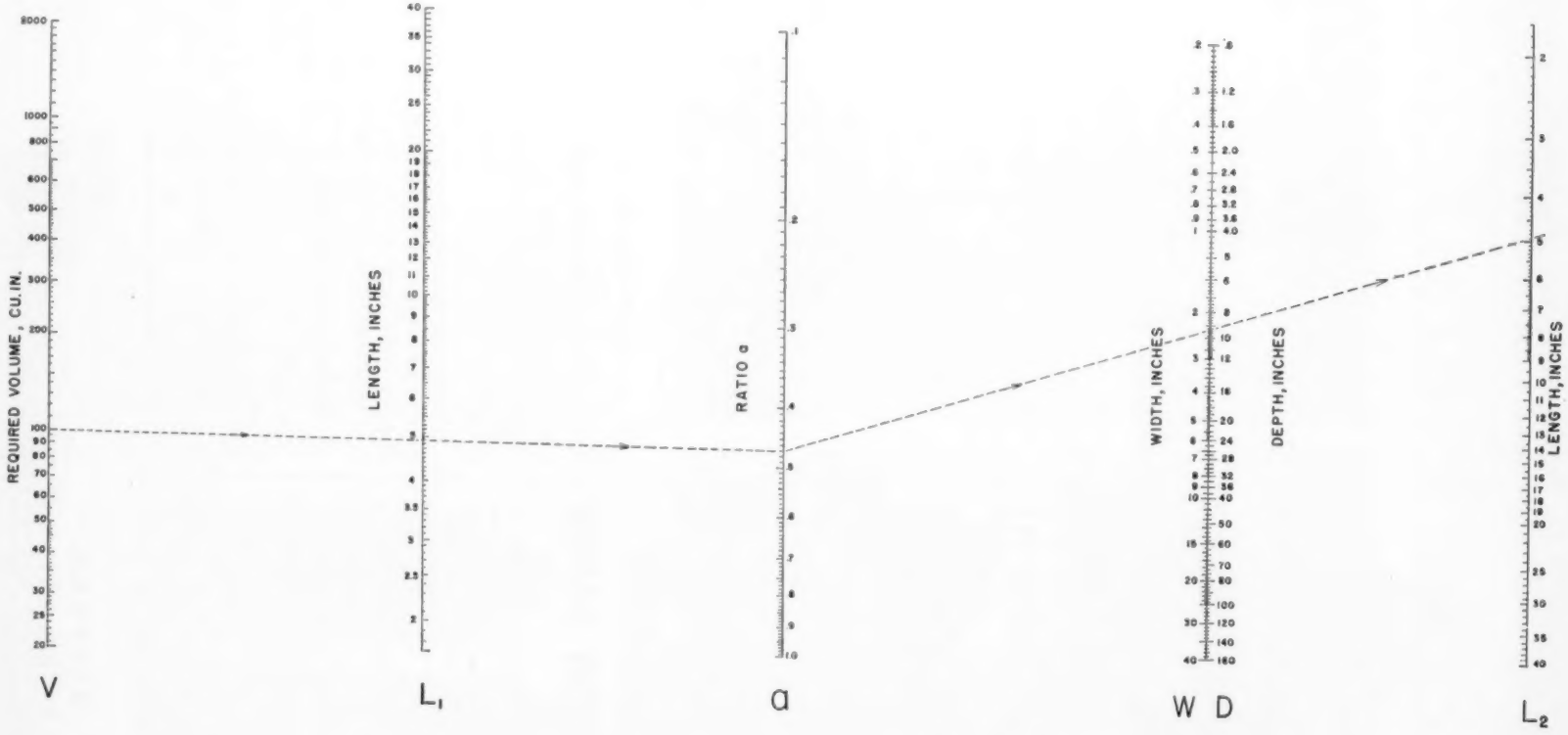
KEY

$L = \sqrt[3]{\frac{V}{4a^2}}$

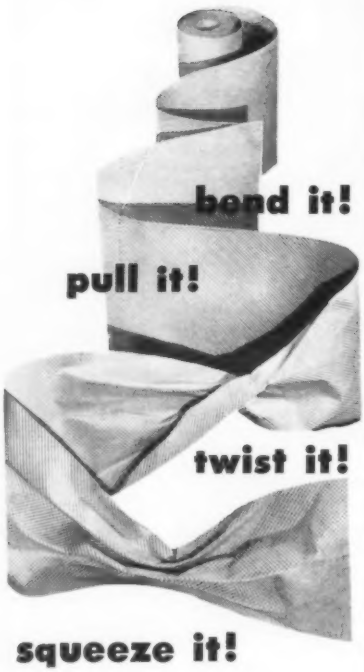
L=LENGTH; W=WIDTH; D=DEPTH.
V=VOLUME, $a = \frac{\text{WIDTH}}{\text{LENGTH}} \leq 1$

(W=aL and D=4W)

EXAMPLE: V=100 cu.in.; a=.47
FIND L,W, AND D.
L=4.9 W=2.3 D=9.2
(FOLLOW DASHED LINE AS SHOWN BY ARROW)



6 NOMOGRAPH FOR DETERMINING THE DIMENSIONS OF SOME FOLDING CARTON STYLES MAKING THE BOARD REQUIRED A MINIMUM



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fied, but the outside dimensions are actually somewhat greater. The addition of these allowances adds a slight discrepancy and means in practical box design that when we are dealing with taped boxes, we are better off to desist from making the change proposed in B. In fact, for boxes of this type we can squeeze out a few extra square inches by going in the reverse direction away from the theoretically ideal size; this is, for our example, from 16x8x11 in. to 11x8x16 in.

RSC (Example C): $W_1 < D_1$ And $L_1 < D_1$—1.5-In. Stitch Flap

In this example, the dimensions of length and depth are interchanged, but no change is made in the width. A 1.5-in. stitch flap is added.

Now

$L_1 = 11.0$ in. $= D_2$
$W_1 = 8.0$ in. $= W_2$
$D_1 = 16.0$ in. $= L_2$
$k_1 = 2.375$ in. = sum of panel score allowances including glue or stitch flap
$k_2 = 0.75$ in. = sum of flap score allowances

Area saved
$= 2k_2(L_1 - D_1) + k_1(D_1 - L_1)$
$= 1.5(11 - 16) + 2.375(16 - 11)$
$= (-7.5) + (11.875)$
$= 4.375$ sq. in.

In this case, the change from 11x8x16 in. to 16x8x11 in. for a 200-lb. A-flute container having a 1.5-in. stitch flap is 4.375 sq. in. However, such a change would be worthwhile only on very large orders.

We also see that there is a saving only in the case of stitched or glue-flap boxes because this is the only instance where k_1 exceeds $2k_2$.

Double Cover Vs. RSC

To enable the box designer to determine at a glance whether the RSC or the double cover container uses less board, we prepared two charts: Fig. 7 is for use with stitched or glued flap RSCs, and Fig. 8 is for taped RSCs.

For a given set of length and width values, you can determine which design uses less board by following a few simple steps:

1. Find the curve on the chart for the board combination and flute needed; this gives you a curve number.
2. Locate this curve for the desired value of F, the cover depth.
3. If the combination of length and width found on the scales intersect on the RSC side of the curve, the RSC is the style with the lesser board area. If they intersect on the double cover side, then this is the style to be preferred. If the intersection is just on the line, both styles use the same amount of board.

As with all graphical procedures, these curves contain some slight errors and approximations. These have no effect on the decision except in the unusual instance when the length and width intersect just on the line. Such errors are chiefly due to rounding off numbers and to the difficulty of drawing exact curves. The approximations stem from the fact that there were always at least two board combinations and flutes with values so nearly alike that it would be impossible to draw them as separate curves. Therefore, one curve was used for both.

Basis For Curves

The combination of relationships cited below provides the basis for constructing the graphical procedures presented in Figs. 6 and 7. By definition,

k_1 = sum of stitch or glue flap plus body or panel or vertical scoring allowances
k_2 = sum of horizontal or flap score allowances
k_3 = sum of scoring allowances associated with the width dimension of the cover + $2F$
k_4 = sum of scoring allowances associated with the length dimension of the cover + $2F$
F = cover depth

From these we can set up a series of equations for the RSC area, A_1, and for the double cover container area, A_2:

$$A_1 = (2L + 2W + k_1)\ (D + W + k_2)$$
$$A_2 = (2L + 2W + k_1)\ (D) + (2L + 2k_4)\ (W + k_3)$$

Multiplying and subtracting we get:

$$A_1 - A_2 = 2W^2 + W(k_1 + 2k_2 - 2k_3) + 2(k_2 - k_3) + k_1k_2 - 2k_3k_4 \quad (9)$$

This is a general equation for all possible combinations of these two

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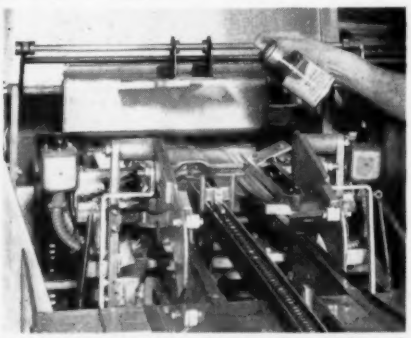

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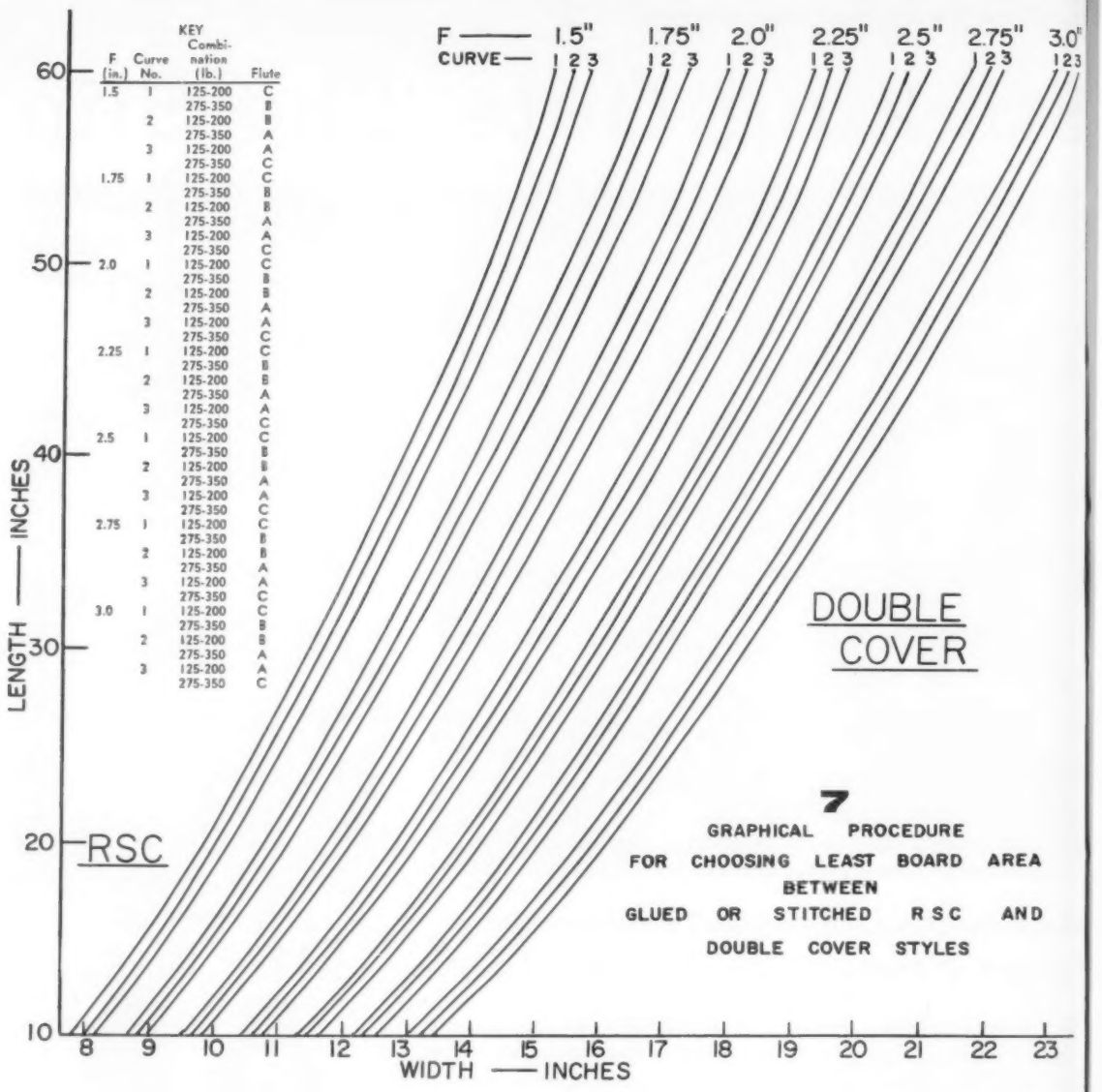

styles and all possible scoring allowances associated with them. We note that: when

$A_1 - A_2 = O$, the two blank areas are equal;

$A_1 - A_2 = +$, the RSC area is greater and hence, the double cover style is better;

$A_1 - A_2 = -$, the double cover style area is greater and the RSC therefore is better.

For any style RSC (stitched or taped) for any given material combination of test and flute, and for any given value of the cover depth, we associated a definite set of values for k_1, k_2, k_3 and k_4 from our shipping container manual. From these we set up a series of equations. In turn, each equation was set equal to zero and solved, for the width by substituting various values for the length over the range most likely to be encountered. For each value of L there is a corresponding value of W such that the two styles have exactly the same board area. Plotting L vs. W, we get a set of curves which are in effect a dividing line; on one side $A_1 - A_2$ will be plus and on the other side $A_1 - A_2$ will be minus. From this point on, it is merely a matter of running through the procedure for each set of conditions desired. An example will serve to illustrate.

Suppose we take a 200-lb.-test A-flute box and let the overlap depth on the double cover container be 1.5 in., and the scoring allowances $k_1 = 0.875$ in.; $k_2 = 0.75$ in.; $k_3 = 4.125$ in.; and $k_4 = 3.875$ in. Substituting these values in Equation 9 and setting it equal to zero, we get

$$2W^2 - 5.375W - 6.75L - 31.3125 = 0$$

(Turn page)

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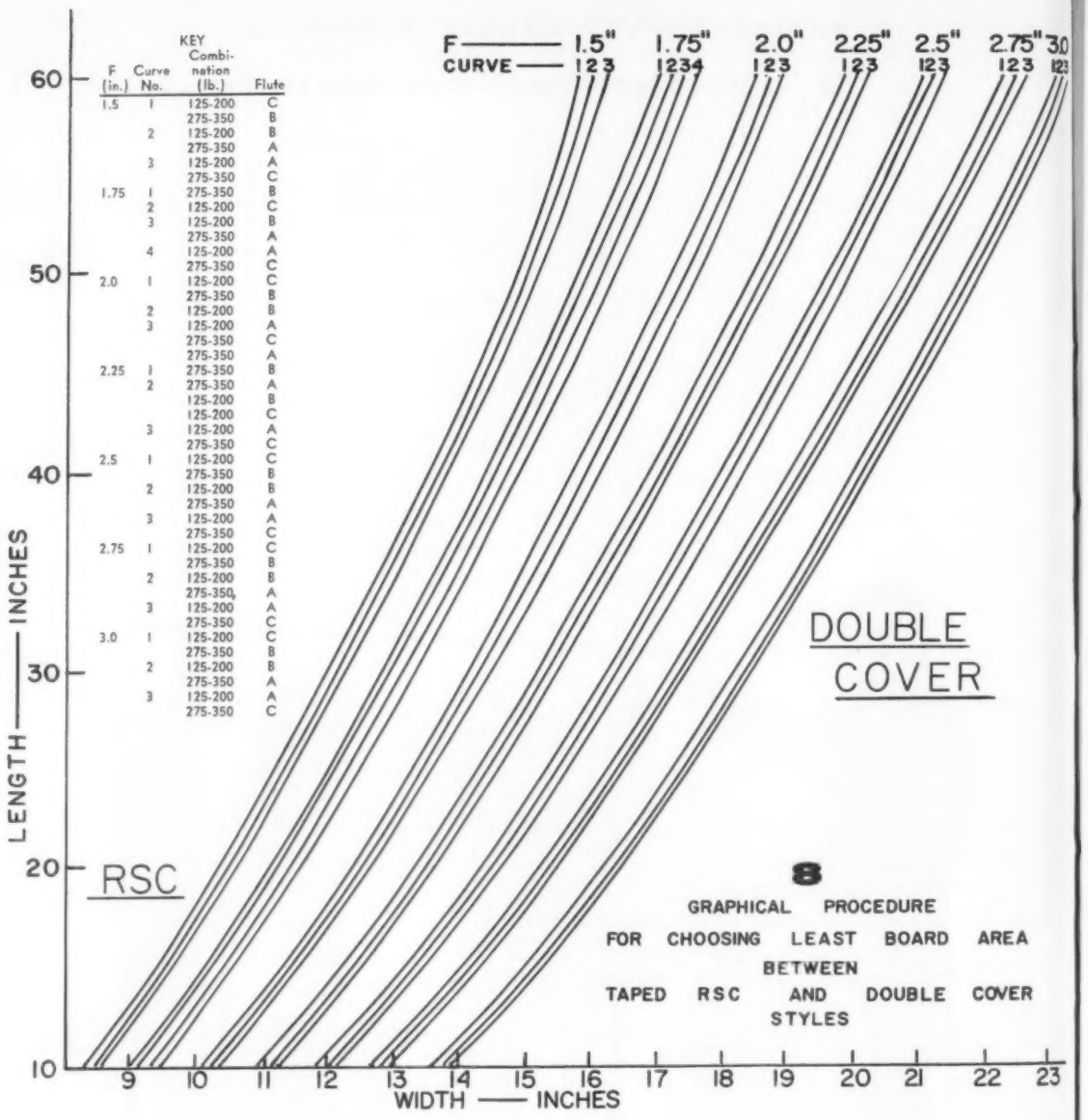

8

GRAPHICAL PROCEDURE FOR CHOOSING LEAST BOARD AREA BETWEEN TAPED RSC AND DOUBLE COVER STYLES

This equation is actually a quadratic of the form

$$Ax^2 + Bx + C = y\ (=0)$$

the general solution for which is

$$x = \frac{-B \pm \sqrt{B^2 - 4AC}}{2A}$$

In our case, $A = 2$; $x = W$; $B = -5.375$; and $C = -(6.75L + 31.3125)$ for any specified value of L.

Now, we assign values for L successively from $L = 60$ in. to $L = 10$ in. in 2-in. intervals. For $L = 60$ we would have:

$$W = x = \frac{5.375 \pm \sqrt{(-5.375)^2 + 8[(6.75)(60) + 31.3125]}}{4}$$

$$W \cong 16.175$$

To check,

$$\begin{aligned} 2W^2 &= 523.26125 \\ -5.375W &= -86.940625 \\ -6.75L &= -405.6 \\ & \quad -31.31252 \\ & \quad -0.59 \cong 0 \end{aligned}$$

The slight discrepancy is due to rounding in evaluating the square root. Actually, this computation can be considerably shortened by the use of some mathematical tricks. It is actually only necessary to compute the term under the root sign for $L = 60$, 58, and 10 in.

The difference between the value for 60 and for 58 is constant for the whole column and can be cumulatively subtracted. The last result should check the value for $L = 10$. Then the totals for each 2-in. interval in the length can have their roots extracted from a table and the rest is simple. *(End)*

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A SERVICE TO READERS: The manufacturers of the products reviewed in this section will send additional information on those w interest you. Circle the number on the postcard (inside front cover) which corresponds to the code number with the item's headline. Mail the card—or write direct to the manufacturer.

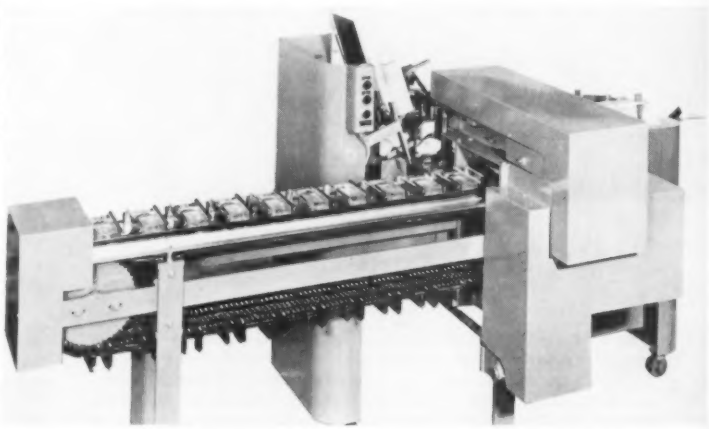
1—High-Barrier Board

The availability of a new type of high-barrier paperboard has been announced. The manufacturer states that it can be used where plastic, metal, and glass containers are now being used. This paperboard is said by the maker to be more economical than these other materials and it has high resistance to moisture, grease, gases, and many acids, alkalies, and solvents. A recently developed polyvinylidene chloride emulsion imparts high-barrier properties of saran-type plastics to this new coated paperboard. Applications mentioned in the announcement include the packaging of cereals, frozen foods, sauces, syrups, milk, motor oils, chemicals, pharmaceuticals, cosmetics, shampoo, and many other products. A single-wall carton of this paperboard will eliminate the need for overwraps or liners as moisture, grease, and gas barriers, the maker claims. In most common requirements, the coating emulsion for this new paperboard is less expensive than polyethylene and has superior grease- and gas-resistance.

Circle code number on card or write: Potlatch Forests, Inc., Dept. PE, Lewiston, Idaho.

2—Automatic Cartoner

Introduced is the new Automax pocket-intake cartoning machine. This automatic moderate-speed machine requires only one operator to maintain production speeds of 72 packages/min. This machine will package collapsible tubes, bottles, typewriter ribbons, electronic tubes, ball bearings, tea bags, and similar products. The carton sizes handled range in heights from ¾ to 2½ in., widths from 1 to 4 in., and depths from 2 to 7 in. The cartoner automatically feeds and forms the cartons, places them in the carton conveyor pockets, inserts the product into the carton, tucks in the end flaps, and then discharges the finished package. The machine is suggested for use in test-market packaging as well as regular production. Designed to save space, it measures 109 in. long and is 54 in. wide. It is mounted on casters so that it can be easily moved. An attachment may be added to this cartoner to imprint the top end panel of the carton. It can also be equipped with a skip-carton mechanism to prevent the feeding of a carton if the conveyor pocket containing the product is empty.



Circle code number on card or write: Redington Div., Crompton & Knowles Packaging Corp., Dept. PE, 3022 St. Charles Rd., Bellwood, Ill.

3—Case Packer

The new V-2 model Cluster-Pak case packer by Miller Hydro Co. is designed for high-speed multi-

packaging lines. Teamed with the Cluster-Pak multi-packaging machine, this new case packer forms a packaging system that automatically handles the product from the filling line through the casing operation at speeds up to 600 cans or bottles per min. No changeover is necessary when shifting from bottles to cans or cans to bottles. The conveyor of the case packer forms a double line of packages, and a three-stage cycle then groups, positions, and cases the containers.

Circle code number on card or write: Mead Packaging Inc., Dept. PE, P.O. Box 4417, Atlanta 2, Ga.

4—Cellophanes

Increased-yield versions of six major Du Pont cellophane types are announced. According to the manufacturer, yield increases of as much as 19 per cent in the number of square inches per pound are now offered by these new types. The six new cellophane types include: one designed specifically for bread wrapping and another for other packaging uses (both are polymer coated); a nitrocellulose-coated cellophane for wrapping baked foods; two cellophanes for cigarette packaging; and two others for cigar wrapping. Although these new films are thinner, they are said by the manufacturer to have the same performance as former films.

Circle code number on card or write: E. I. du Pont de Nemours & Co. (Inc.), Dept. PE, Film Dept., Wilmington 98, Del.

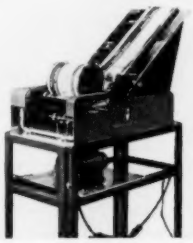
5—Releasing Parchment

A new type of releasing parchment has been introduced. This paper was developed for use in the manufacture of pressure-sensitive tapes, labels, plastic sheeting, bandages, and other release paper applications. According to the manufacturer of this new product, Paterson brand releasing parchment (No. 40-195-TS) offers a smooth fiber-free surface with excellent releasing qualities on one side. The other side can be printed. The new release-type paper is available in a 40-lb. brown stock. It is said by the maker to release readily from sticky or tacky materials even after prolonged contact, and at the same time it does not alter the effectiveness of adhesive surfaces. The announcement points out that in certain cases this new material can be used repeatedly.

Circle code number on card or write: Paterson Parchment Paper Co., Dept. PE, Bristol, Pa.

6—Can Labeler

A new automatic paint can labeler handles up to 16 one-gallon round cans a min. This la-

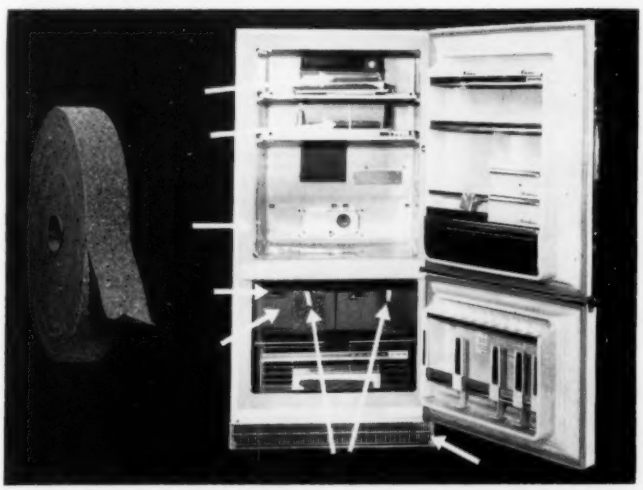


beling machine, designated Model 14C, affixes spot, face, or wrap-around labels on ½- and 1-pt., 1-qt., and 1-gal. cans with ears. The machine features a floor stand with casters for portability. Using one operator, it can be used for labeling steel, tin, glass, plastic, or fibreboard containers. The motor incorporates a variable-speed control.

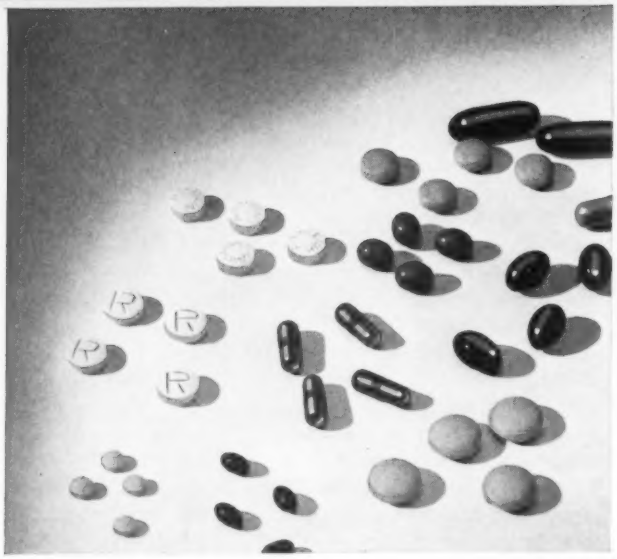
Circle code number on card or write: Labelette Co., Dept. PE, 216 S. Jefferson St., Chicago 6, Ill.

7—Multi-Purpose Padding Material For Appliances

A new packaging system utilizing just one padding material for shipping appliances has been announced. The maker of this cushioning material reports that a common problem of appliance manufacturers is that in packing a single unit, a variety of different requirements must be met to insure against damage. For instance, loose shelves and trays must be secured and cushioned, shiny porcelain surfaces need protection against mars and

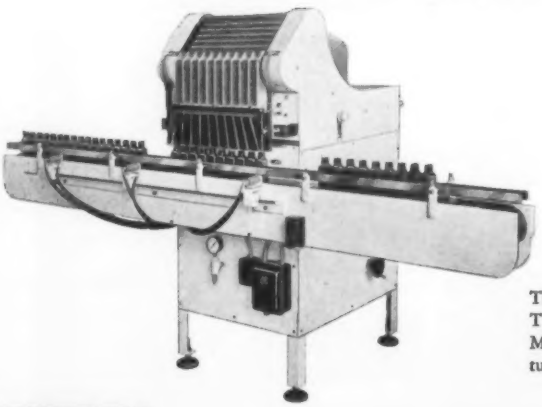


The Fast Automatic Crandall Counter is IDEAL for Producers of Tablets, Pills or Capsules



Here's Why!

The Crandall . . . 1. handles practically all types of coated or uncoated tablets, pills and capsules
2. can be equipped for any count
3. handles bottles, cans or cartons
4. runs at speeds up to 60 bottles of 100-count per minute—faster where counts are lower
5. can be equipped for automatic or semi-automatic operation



The original Crandall Tablet Counting Machine is manufactured *only* by **US.**

PACKAGING MACHINERY MANUFACTURERS INSTITUTE PMMI MEMBER

U. S. AUTOMATIC BOX MACHINERY CO., INC.

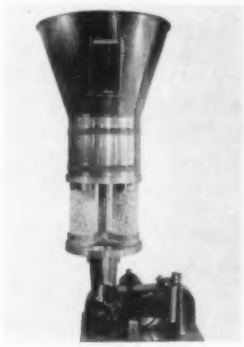
122 ARBORETUM ROAD, ROSLINDALE, BOSTON 31, MASS.
Branch Offices: New York • Chicago
James C. Hale Co., Los Angeles, San Francisco • R. S. Gold, Toronto

scratches, and the weight of the appliance itself must be cushioned at critical pressure points. With this new packaging system, one cushioning material, called Tufflex padding, is required instead of a different material for each cushioning requirement. Advantages cited in the announcement for this padding are that it is nonabrasive and tough so that it will not pull away from staples. It is also clean, lightweight, easily fabricated to any shape, and exhibits excellent compression resistance.

Circle code number on card or write: Wood Conversion Co., Dept. PE, 1st National Bank Bldg., St. Paul 4, Minn.

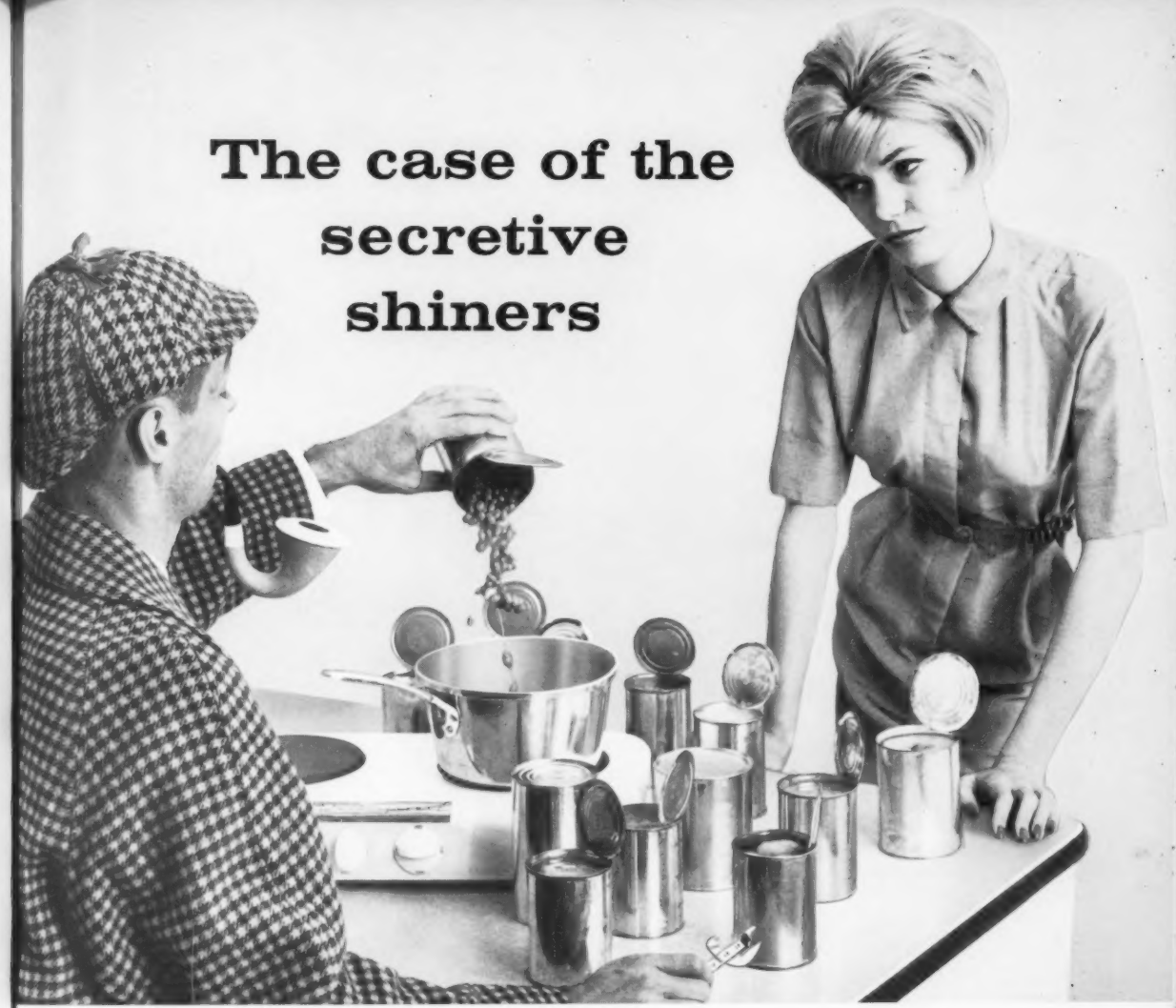
8—Dry Product Filler

A new filling machine to measure and discharge large as well as small quantities in a single fill



of such products as popped corn, cereals, and similar lightweight free- or semifree-flowing materials has been introduced. This BR6-JOA model fills boxes and bags, and its windowed hopper includes a rotating agitator which delivers the product to cups at an even rate to assure accurate weighings. Change cups available for popped corn are 1¾ to 9 oz., corn curl cups from 4½ to 24 oz., caramel corn cups from 7½ to 44 oz., and various others for different products. Variable-speed filling permits from 10 to 18 weighings/min., depending on the product and weight. The spouts of this filling machine can be tailored to in-

The case of the secretive shiners



MISS WATSON: *Fearless, you look like you're preparing a vegetarian's banquet!*

FEARLESS FULLER: I'm eating in today—and I'm hunting for a can of beans.

MISS WATSON: *But how can you tell what's inside BARE cans?*

FEARLESS FULLER: They're called "shiners," Miss Watson. A disgusted canner gave them to me. I have to guess what's inside.

MISS WATSON: *How come they didn't get labels?*

FEARLESS FULLER: The old-style pick-up glue wouldn't grab the label edge because the cans were too wet.

MISS WATSON: *But I bet you specified a Fuller glue to solve the problem, Fearless!*

FEARLESS FULLER: Of course, Miss Watson. Remember, Fuller has eight different grades of Nu-Type Hot Pick-Up glues. There's a right grade for the temperature and moisture conditions of *every* canning line. Fuller's Hot Pick-Up gives good mileage—is non-staining—and dries transparent! Now my customer's cans are grabbing labels like kids snatching free hot dogs!

MISS WATSON: *Oh Fearless—you're so . . . so . . . sure of yourself!*

FEARLESS FULLER: No, Miss Watson. We Fuller men are sure of Fuller *adhesives* . . . there's one for every sticky problem!

Got an adhesive problem? Call your nearby H. B. Fuller plant—and ask for "Fearless" Fuller.

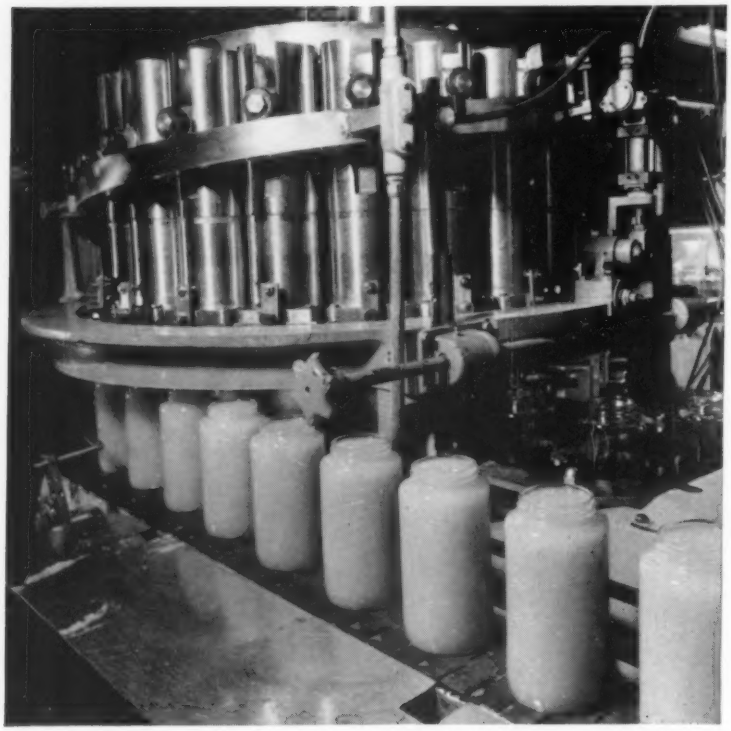
H. B. Fuller Co.

INDUSTRIAL ADHESIVES

St. Paul, Minn., MI 6-8641 • Kansas City, Kansas, FI 2-3615 • Dallas, Texas, RI 7-7315 • Cincinnati 23, Ohio, MU 1-5420 • Detroit, Mich., LO 7-5980 • Atlanta, Ga., MA 2-3502 • Tampa, Fla., 45814 • So. San Francisco, Calif., PL 6-5450 • Portland, Ore., CA 6-3493 • Los Angeles, Calif., AN 3-2113 • Chicago 22, Ill., MI 2-6300 • Buffalo 7, N. Y., TR 5-6366 • Memphis 7, Tenn., JA 6-4212 • Linden, N. J., WA 5-2272 • Also Toronto, Ont., Can. • Winnipeg, Man., Can. • Fuller Adhesives International, Nassau, Bahamas

For more information circle No. 249 on Reader Service Card

FLUIDICS* AT WORK



How to control "head space" *accurately,* every fill

Filling 190 quarts of applesauce per minute to ±1/10 fluid oz. is no problem with this Pfaudler® Rotary Piston Filler at Duffy-Mott. Always the right "head space" every fill.

In fact, most products you handle —from a spread like deviled ham to a lightly fluid evaporated milk—can be packaged to this precision with a Pfaudler filler.

What's behind such predictable and profitable accuracy? Simplicity in design—design that gives you the proper balance of smooth piston fit and small product "cushion." No surge. No leakage. No splashing.

Design that lets you adjust accuracy without stopping the filler.

Design that keeps primary moving parts to just four—piston, valve roller, valve trip cam, and valve-lock wear pad.

Of course, it's also important to match port size and piston diameter to your product. But with the wide range of fillers available from Pfaudler, this presents *no* problem whatsoever.

Preventive maintenance is a final consideration. What to look for and when to act are spelled out in detail in a monograph entitled "Factors Affecting Accuracy of Vertical Piston Fillers." Written by a member of our Filler Product Engineering Department, it covers design, maintenance and process conditions.

For your copy, ask for Reprint 540. Address your inquiries to our Pfaudler Division, Dept. PE-71, Rochester 3, New York.

*FLUIDICS is the Pfaudler Permutit program that integrates knowledge, equipment and experience in solving problems involving fluids.

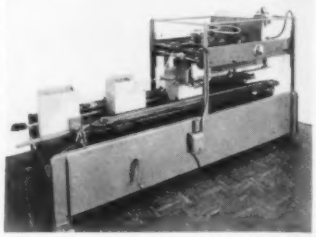
PFAUDLER PERMUTIT INC.
Specialists in FLUIDICS . . . the science of fluid processes

dividual needs. Optional features for added speed and convenience include an air-blast bag opener and a device to insert gases (such as nitrogen) into the bags or containers before, during, or after filling.

Circle code number on card or write: Paul L. Karstrom Co., Dept. PE, 1822 W. 74th St., Chicago 36, Ill.

9—Case Sealer

The new Dialmizer automatic top and bottom case sealer features a pressurized glue system

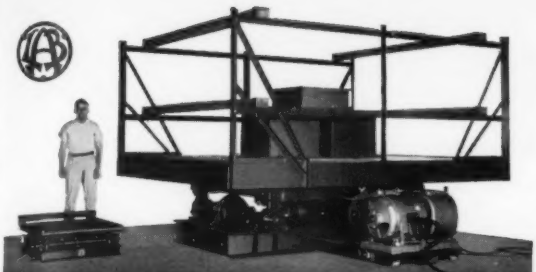


which extrudes the adhesive onto the cases instead of spraying it. The manufacturer reports that glue savings of up to 50 per cent are possible with this new machine. One of the advantages cited is that the unit does not need daily cleanup. Incorporated within this machine is a dial method of changing the glue spread to accommodate a wide variety of case sizes and glue patterns. The unit also features one setting for both top and bottom glue applicators, the glue skip is easily adjustable, and it has positive case timing.

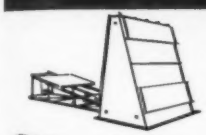
Circle code number on card or write: A-B-C Packaging Machine Corp., Dept. PE, P.O. Box 1146, Clearwater, Fla.

10—Coding Enamels

Packaged in 16-oz. aerosol containers for convenience are a new line of enamels which are fast drying and permanent. They are said by the maker to provide the simplest and most economical way to color code inventory stock and work in process, mark and identify equipment, mark for inspection, and color code



L.A.B. THE *Complete* LINE OF TRANSPORTATION SIMULATORS



Don't compromise! Get exactly the transportation simulator you need for your test program from L.A.B., originators of scientific package testing equipment.

- Conbur (incline-impact) testers from 400 to 10,000 lbs. capacity.
- Vibration testers from 100 to 10,000 lbs. capacity (400 and 10,000 lb. units shown above.)
- Compression testers from 2,000 to 10,000 lbs. capacity.
- Drop testing machines and quick-release hooks from 100 to 12,000 lbs. capacity.

WRITE FOR COMPLETE CATALOG OF L.A.B. TRANSPORTATION SIMULATORS

L.A.B. Corporation Skaneateles 5, N.Y.

Circle No. 251 on Card

JUST
5 MINUTES
CAN SAVE YOU
TIME AND MONEY ON
ADHESIVES

THAT'S just about how long it takes to read Arabol's special 8-page booklet . . . *How to buy adhesives for better adhesion.* It contains a list of 23 basic questions which will help you determine the qualities and characteristics you need in your adhesive requirements. This guidance questionnaire probably can save you time and money in your *manufacturing, packaging* or *case-sealing operations.*

We would like to send this booklet to you. There's no obligation. Mail your request on your letterhead to: Dept. PE—ARABOL MFG. CO.—110 E. 42nd Street, New York 17, New York.

Circle No. 252 on Card

Products Packaged in UNION CARBIDE VisQueen film keep fresh!

Products stay fresh longer—keep their fresh, attractive appearance when they're protected in modern VISQUEEN polyethylene film. An impenetrable moisture barrier, VISQUEEN film is proving its worth and reliability with an amazing variety of products. Try it and see.

PLASTIC FILMS **VISKING COMPANY**

Division of UNION CARBIDE *Corporation*

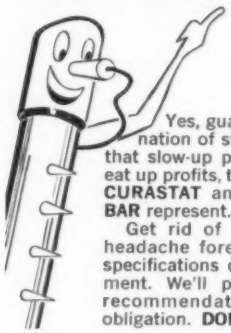
6733 West 65th Street, Chicago 38, Illinois—Dept. PE-7

VISQUEEN film— the original polyethylene film . . . finest for packaging.

Circle No. 253 on Card

We don't just sell static eliminators

WE SELL STATIC
ELIMINATION—



Yes, guaranteed elimination of static problems that slow-up production and eat up profits, that's what our **CURASTAT** and **OXY COLD BAR** represent.

Get rid of static-caused headache forever. Send us specifications of your equipment. We'll provide expert recommendations without obligation. **DON'T DELAY!**

1-196

HERBERT PRODUCTS, INC.
186 LINDEN AVENUE • WESTBURY, N. Y.

Circle No. 254 on Card

TURNS 60 to 180 bottles per minute 270° or 360° to empty foreign matter. Hold containers upside down for approximately 18" for air cleaning if so desired. Overall length of unit 8' 8" — 32" for the powered section and 6' for the twister. Easily changed twister permits use for various size containers.

MAIL THIS COUPON FOR FULL DETAILS

ISLAND EQUIPMENT CORP. Dept. PE-7
Miami 38, Florida
P.O. Box 38-276

Please send Bulletin SPT-1 giving details on the Styl-O-Matic Powered Twister.

NAME_____

ADDRESS_____

CITY_____ STATE_____

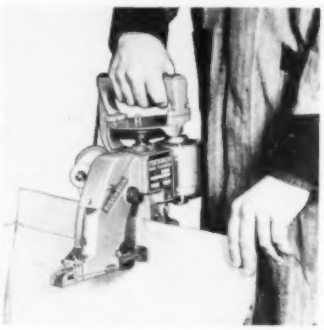
Serving Industry 20th Year

other operations. These enamels can be used on wood, metal, plastic, corrugated, and other surfaces and are available in 18 different colors. The container sprays a dense, compact cone of enamel.

Circle code number on card or write: Reynolds Ink, Inc., Dept. PE, 4536 Euclid Ave., Cleveland 3, Ohio.

11—Bag Closer

A new portable bag closer, offering greater capacity and adaptability to a wide range of bag



closing applications than previous models, has been introduced. This unit, Model D, is designed to close all types and thicknesses of textile and paper bags. According to the manufacturer, this new model operates efficiently in many instances where portable units were previously impractical. It can be used as a completely portable unit, or in one position with suspension units. It can also be used with a Faseal taping attachment for applications where tape-bound closures are required.

Circle code number on card or write: Dave Fischbein Co., Dept. PE, 2730 Thirtieth Ave., S., Minneapolis, Minn.

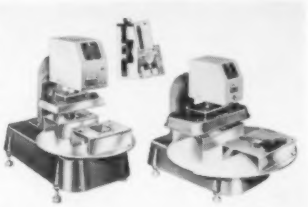
12—Heat-Seal Tester

A new device assists in the quality control of heat-sealed packages. Called the Heat-Seal-O-Scope, it uses polarized light to examine heat seals between transparent plastic films or laminates. Essentially, this instrument is a polariscope in which one polarizing filter is secured at an axis orientation of 90 degrees to that of the second. By rotating the axis of polarized light produced by one of the filters, transparent plastic film placed between the two filters is shown in a color and light intensity which varies according to the material's crystalline condition. Film areas of different crystalline structure show up as somewhat different colors, thus providing a measurement for the quality of the heat seal. Non-uniformity in a web of plastic before or after formation can also be observed.

Circle code number on card or write: Precision Machine and Development Co., Dept. PE, Box 645, New Castle, Del.

13—Blister Sealers

Two new plastic blister sealing machines for high-speed package production are announced.



Both machines are bench size and designed for short-run packaging jobs. The manufacturer says that both machines have speed, low cost, and power operation. One inexperienced girl can load and seal a blister package every 3 sec. or less. Package sizes can be changed in less than 5 min. These machines will handle hard and soft as well as granular products. One of the machines, called the automatic Clear-Pack 07CP Jr., can seal blister packages up to 10x13 in. The sealing table automatically rotates and sealing is accomplished by resistance heating. The other machine, the Clear-Pack 06CP Jr., has a manually-rotated table and can seal packages measuring up to 6x9 in. The sealing table on this model

MILPRINT BRINGS YOUR CUSTOMER ENTHUSIASM TO A BOIL

Past package failures inhibited the bright future once predicted for boil-in-the-pouch foods. Consumer acceptance was lukewarm. But now—Milprint has the answer in KETTLE-REDI pouches!

KETTLE-REDI pouches by Milprint are the first boil-in-pouches that not only won't delaminate even under temperature extremes from sub-zero to boiling, but remain unaffected by most chemical combinations, resist tearing and scuffing, *and* offer high gloss reverse printing that's *locked* in between the laminates. It can't touch food; can't rub or flake off!

In over 60 years of flexible packaging leadership, Milprint has consistently come up with answers to tough technical problems like this one. One reason: Milprint research and design experts draw on the widest variety of materials available anywhere—and are not obliged to favor any one. This means an "open mind" approach to your packaging problem—no "selling off the shelf," but a custom-built package that meets your specific marketing needs at economical cost. Review your packaging on a regular schedule with Milprint to keep ahead of your competition. Start now—learn how . . .

Milprint, Inc., Milwaukee, Wis., Sales offices and plants across the nation

KETTLE-REDI is a Milprint trademark

MILPRINT PACKAGING GIVES YOUR PRODUCT **MARKETING POWER**

**Milprint was given two merit achievement awards for KETTLE-REDI pouches in 1960, by National Flexible Packaging Assn.*

Cady Exact Micrometers Dead Weight 10/1000ths Spring Action & Portable

•

Test for QUALITY CONTROL

Papers/Films/Foils/Boards

Cadytest Instruments are designed for accuracy in determining or comparing thicknesses, basis weights, or bursting strength. They are available in stock models, or specials for specific tasks. Write for Brochure and Prices, showing entire line.

E. J. CADY & CO.
Manufacturers
674 N. Harlem
River Forest, Illinois

Cady 10/1000 Micrometer

Carbide-Tipped Anvils Available on All Mikes

Circle No. 257 on Card

end costly overweights

speed production

Packagers of dry powdered, granular or crystalline materials can do the job more economically on the right model of Gump-built Equipment. Weighers for manual lines—up to 50-pound discharges. Automatic bag feeding, opening, weighing and ejecting equipment (illustrated). Automatic can, jar or carton lines. Accurate weights and speedy, dependable operation save product and packaging labor. *Choose your equipment to fit the job.* Write for recommendations—tell us the material, weight, container, and capacity.

B. F. GUMP CO.
1346 S. Cicero Ave., Chicago 50, Ill.

can be automatically rotated by air power for higher volume production.

Circle code number on card or write: Erdco Engineering Corp., Dept. PE, Addison, Ill.

14—Foil Adhesive

Resyn 33-8012 is a new vinyl-casein adhesive for foil laminations which is said by the maker to have a number of advantages for use in food packaging. This new adhesive bonds foils to a wide variety of paper and paperboard stocks and weights. The adhesive's low foam tendency makes possible high-speed operation without the need for repeated addition of defoamers. The maker says it has excellent resistance to water, grease, and temperature change, giving the adhesive a versatility which makes it well suited for labels, greasy food packages, heat-sealed pouches, insulation constructions, and the like. A high solids content (5 to 8 per cent higher than that of currently-used casein-latex adhesives) gives this new adhesive a faster set at high speeds and reduces the chance of corrosion, according to the maker. Another advantage mentioned is that the product's solids content and high viscosity keep it on the surface of porous stocks.

Circle code number on card or write: National Starch & Chemical Corp., Adhesives Div., Dept. PE, Grand Central P.O. Box 50, New York 17, N.Y.

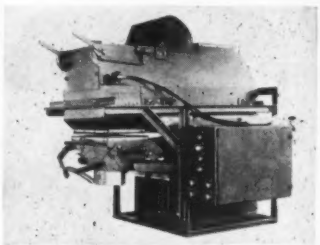
15—Plastic-Lined Cup

A polyethylene-lined cup container for food products was recently introduced. The polyethylene is laminated to the paper before cup forming and the container is available in a 16-oz. size. This new cup package is not only lined with polyethylene, but it also is coated on the outside with plastic. The new container can be used with any type of standard lid and is completely heat-sealed, with the polyethylene lining serving in place of an adhesive. Some of the advantages noted by the manufacturer are that the container can be filled with foods while they are still hot and the bottom of the cup is coated both inside and outside with polyethylene to provide added strength.

Circle code number on card or write: American Can Co., Dixie Cup Div., Dept. PE, 100 Park Ave., New York 17, N.Y.

16—Bag Weigher

A new high-speed automatic gross-weighing system for bagging soft sugar and similar sticky



materials has been developed. The introduction of the G18C, according to the announcement, permits one operator to fill 100-lb. bags at a rate of 5/min. with an accuracy of ± 2 oz. This unit automatically portions sugar from a bulk bin and fills 25-, 50-, and 100-lb. bags with preset amounts. The three basic components making up the system are a belt feeder, a clamp-type bag holder with filler spout, and a flexure plate scale which has no pivots or other wearing parts. It has a separate control box, and variable feed rates are obtained through two flow-control gates above the constant-speed belt. One gate permits a very rapid flow and the other is a dribble gate for trickle feed. Mercury switches actuated by a magnet permit both gates to remain open until the preset weight is approached and the dribble gate completes the apportionment.

Circle code number on card or write: Thayer Scale Corp., Dept. PE, Thayer Park, Pembroke, Mass.

17—Pallet Bands

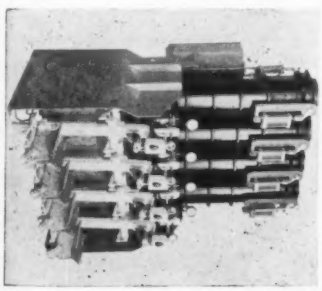
Giant rubber bands that snap around the top layer of cartons stacked on pallets will bring

savings in labor, damage, and replacement costs, the manufacturer reports. These pallet bands hold the top layer of stacked cartons so they do not slide and fall off when the pallets are moved. The bands are available up to 1½ in. wide and 6 ft. long, and they can be stretched to 18 ft. These bands are designed to replace masking or other types of tapes which can be used only once, take time to apply, and often mar the cartons when removed.

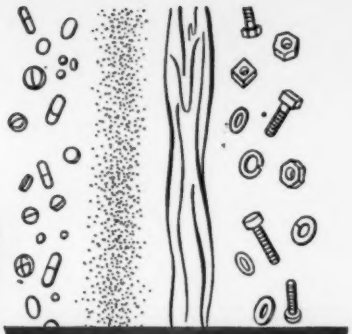
Circle code number on card or write: The B. F. Goodrich Co., Dept. PE, Akron, Ohio.

18—Valve Bag Packer

A new multiwall valve bag filling machine which can handle a wide range of powdered and



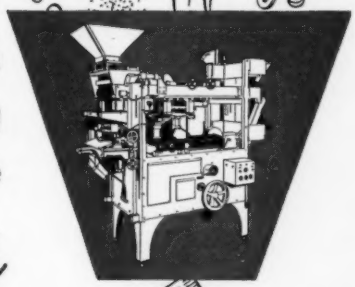
granular free-flowing materials is available. Called the Force Flow packer, this machine features a pressure chamber which packs the materials so they fill faster and provides a more tightly filled bag. This permits higher production output, greater packaging economies, and for many products, a reduction in bag size, the manufacturer



NOW

new versatility in pouch-packaging with the

NASH-*pak*



The new NASH-PAK solves a tremendous variety of packaging problems . . . NASH-PAK forms, fills, and seals (heat or impulse) a variety of supported or unsupported films . . . NASH-PAK packages powders, liquids, gelatins, or solids . . . NASH-PAK packages several different items simultaneously -- in the same or in individual pouches . . . NASH-PAK can fill and seal different-sized bags at one time . . . NASH-PAK converts easily from one packaging task to another . . . Bag sizes are changed easily from maximum 8" x 14" to many smaller sizes . . . Learn more about the new NASH-PAK . . . The J. M. Nash Company, designers and manufacturers of NASH-PAK, can help you with your packaging problems . . . Write today . . .

J. M. NASH COMPANY, INC.

107 Jackson Street
Oshkosh, Wisconsin

For more information circle No. 259 on Reader Service Card

from ALCOA July, 1961

Current Rigid Container Report

Breakthrough . . . aluminum in the citrus industry. Most food packers should note with interest recent developments in the Florida citrus concentrate canning industry. In the period of two years, a relative newcomer to canning — aluminum — has successfully captured a 50%-plus share of the market. Conservative forecasts estimate something in excess of 80% for the 1961-62 pack. Such rapid inroads in a tough competitive market bear investigation by other food packers faced with tight profit margins and high operating costs.

Aluminum's success in citrus . . . a matter of cold cost. Freight savings* for citrus concentrates, for example, exceed $61.00 a carload between Orlando, Florida, and Chicago . . . $55.00 from Orlando to New York City . . . substantial figures that help offset today's high cost of distribution.

Opportunities for even greater savings may be realized through new container print designs that eliminate the base coat prior to printing. Such designs permit aluminum's eye-catching luster to come through . . . the result: greater attention in the market . . . greater profits.

Special savings for those who manufacture their own cans and can ends. In producing round can ends, scrap totals up to 20%, regardless of the material used. Aluminum, which is easy to reclaim, is worth about 60% of its original cost . . . a big plus factor.

Aluminum also offers advantages other than cost. While aluminum cans save on freight, they also lighten the work load throughout the production and distribution cycle. They will not rust. They chill more quickly, open more easily. Aluminum as a metal has a favored position in your customer's mind. She likes it.

*Based on a 36,000-lb minimum carload rate.

The net result . . . aluminum progress in many markets. While the largest penetration of the aluminum can so far has been its adoption by citrus concentrate packers, many other applications are in various stages of study or distribution. Aluminum motor oil cans have been on the market for several years. A number of brewers are currently using a 7-oz aluminum can made by the impact process. Frozen food packers and others are sending products to market in aluminum cans. Many other industries are considering and testing aluminum as a packaging material for their products.

Exciting, technological advances . . . from Alcoa. New alloys, new foil laminations, new easy-opening can tops, new joining methods . . . these are just a few of the areas in which Alcoa research is making progress. Several have been "overwhelmingly" successful in recent market tests. Others will pay dividends to Alcoa customers in the years ahead.

Special Report for Citrus Concentrate Packers

Uncoated aluminum entirely feasible for frozen orange concentrate juice . . . Alcoa laboratory tests have revealed that not only fresh orange but grapefruit, grape, lemon and lime juices at room temperature have a negligible reaction with uncoated aluminum specimens. Pickup of aluminum by the juices was detected, but in very slight amounts, less than found in many other foods. The tests with uncoated specimens revealed that, as expected, testing the juices at refrigerated temperatures (40°F average) further reduced the juices' rate of attack on the aluminum and the pickup of aluminum by the juices. With frozen concentrated juices being normally stored at much lower temperatures (about −10°F), the action is virtually eliminated.

Consideration should be given to incorporating uncoated aluminum containers in any pilot testing or test packs of aluminum containers for frozen, concentrated juices.

Your Complete Packaging Service Center

to ALCOA

I want an Alcoa representative to contact me with regard to

- ☐ **Foil Packaging**
- ☐ **Aluminum Closures**
- ☐ **Cans and Containers**

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(Fill in specific applications)

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(Advertisement)

A message to

Package research and development departments
Engineering departments
Technical & research libraries
Everyone concerned with what is being written in the world of packages

We recently were appointed American agents for Packaging Abstracts, published by the British research association PATRA—The Printing, Packaging & Allied Trades Research Association. This service gives you in a single, handy periodical (5½x8½ in., averaging 75 pages a month, plus the annual index), brief summaries of packaging articles that have appeared in some 200 packaging magazines plus over 150 magazines devoted to printing and allied subjects, and numerous patents, books, pamphlets, and technical data provided by makers of machinery and materials. An average issue carries about 400 abstracts based on literature received from all parts of the world.

Examine It 10 Days Free

Mail the coupon to us and we will mail you a sample copy of the current issue. You may return it in 10 days and you owe us nothing. If you keep it, we will mail you subsequent issues and the annual index as they come off the press, and bill you $42.00 for a one-year subscription.

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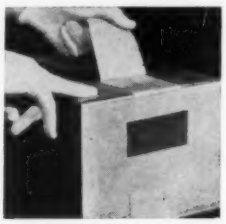
states. Cement, sugar, fertilizer, plaster, starch, and many other products are packed by the machine. It can handle 25- to 100-lb. sewn or pasted valve bags and is available in one- to four-tube models. The four-tube model packs up to 28 bags/min. Three features of the machine mentioned in the announcement are: (1) an expandable rubber sleeve on the filling tube which seals off the valve of the bag during filling, (2) an automatic time delay in the filling cycle, and (3) controlled venting of each bag after filling. Weight accuracy is within ± 4 oz. on most products. The operation of the packer is pneumatic.
Circle code number on card or write: St. Regis Paper Co., Dept. PE, 150 E. 42nd St., New York 17, N.Y.

19—Reinforced Tapes

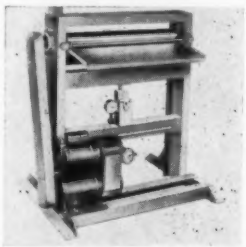
Introduced is a new line of non-asphaltic reinforced sealing tapes with a quick-strip feature to simplify the opening of cases. Called Golden Quick-Strip Snaketape and Glaspun, these



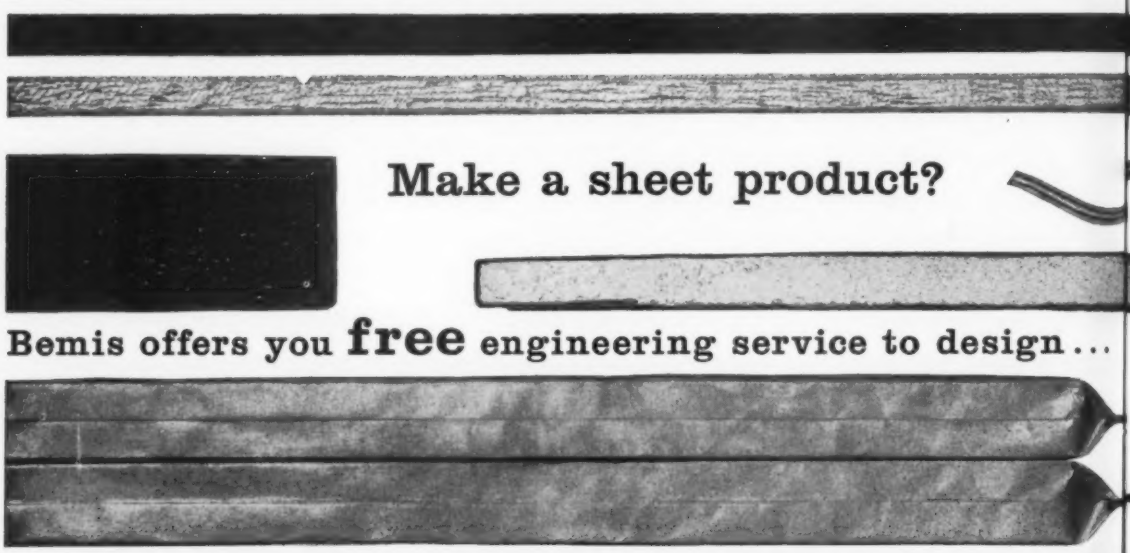
tapes feature a newly developed non-staining laminate that will not bleed at high temperatures or become brittle at temperatures below zero. According to the manufacturer, this permits clean quick release of the top layer of kraft and reinforcing yarns for ease of opening.
Circle code number on card or write: Ludlow Corp., Ludlow Papers Div., Dept. PE, Needham Heights 94, Mass.

20—Perforator

Recently introduced was a new perforating machine for use in skin-packaging operations. This machine perforates the coated paperboard cards used in skin packaging on a production basis. The manufacturer says that the small holes made by the perforator allow a maximum passage of air for vacuum-forming operations. It can also be used for production perforating of holes in sheet film, paper, foil, fibreboard, corrugated, and



coated materials. This machine is made in roll widths of 33, 48, and 60 in. with various needle pointed pin patterns. The pins are replaceable if they become worn or broken. A standard machine is equipped with variable-



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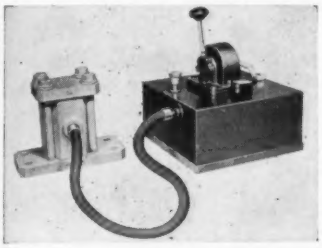
speed drive with standard speed ranges from 22 to 220 r.p.m. It is designed for hand feeding or automatic in-line feeding.

Circle code number on card or write: Robert A. Main & Sons, Inc., Dept. PE, 465 W. Main St., Wyckoff, N.J.

21—Pneumatic Vibrators

Announced are two new models (1¼ and 3 in.) of Vibrajust pneumatic vibrators. At the same



time, the manufacturer announced the development of an impact-frequency adapter. This development gives full-range control of the vibrator's frequency as well as impact control. According to the maker, this is the first time that standard equipment controls the impact and the frequency of pneumatic vibrators. Close control of input compressed air allows the vibrators to be adapted to efficient vibrations for flow of materials or control of equipment on which the vibrator is used.

Circle code number on card or write: The Branford Co., Dept. PE, 130 Glen St., New Britain, Conn.

22—Bakery Bags

New printed side-seal polyethylene bakery bags, designed for the recently introduced Carbert automatic bagging machine, are announced. These bags are particularly applicable for roll and bun packaging. Kordite's Carbert Pack houses punched and perforated bags for easy dispensing from a metal wicket binding. The bags range in size from 8 to 13 in. in width and 8 to 18 in. in length. Filling and sealing of these bags can be done up to a rate of 40 packages/min.

Circle code number on card or write: The Kordite Co., Div. of National Distillers & Chemical Corp., Dept. PE, Macedon, N.Y.

23—Aerosol Closure

New is a plastic tamper-proof seal to be used in conjunction with products packaged in aero-

sol cans. These closures are offered in transparent polystyrene and polyethylene. The caps may

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*Product to be packaged*_____

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*City*_____ *Zone*____ *State*_____

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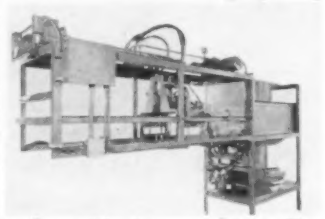
be used with any standard 1-in. valve cup and are of a height which will clear most valve activators currently on the market with the exception of spout-type valves. This closure can be used with most aerosol overcaps. The closure is easily torn off for use of the product, but after removal, the seal cannot be repositioned.

Circle code number on card or write: PharmaPlastics, Inc., Dept. PE, 205 S. Smallwood St., Baltimore 23, Md.

24—Bag Opener

Reported is the development of an automatic baler bag opening



and positioning machine. Designed for maximum versatility, this Sysco-matic unit can be integrated into most baler-packing lines, such as those used for flour and sugar. This machine is adjustable and can handle 2- through 10-lb. balers. The unit is pneumatically-electrically powered and can be operated at speeds up to 15 balers/min.

Circle code number on card or write: The Systemation Corp., Dept. PE, 60 Fremont St., Worcester 3, Mass.

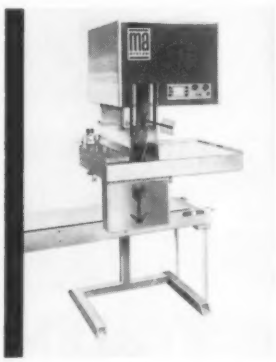
25—Form-Fill-Sealer

A single cycle of this new machine forms the package, feeds the product into the package, and seals its sides and ends. Light, medium, or heavy solid products (in single or multiple packs) are packaged in polyethylene and other sheet film from rolls of plain or shrink-type material. Film thicknesses handled are from 0.00075 to 0.003 in. On the standard Model PW, products ranging in size from 5 to 16 in. long and 2 to 6 in. wide can be packaged. A positive feed or pusher mechanism is used in conjunction

with forming mandrel shapes to suit the particular product. The forming tube can be round, oval, or flat. This unit can be hand loaded or conveyor fed with average machine operating speeds of approximately 30 packages/min. depending on the product size, loading system, and film. The form-fill-seal cycle can be manually controlled or automatic for continuous cycle repeat. It features a full-range heat seal adjustment and electric eye registration for printed films.

Circle code number on card or write: Pratt Manufacturing Corp., Dept. PE, 3097 W. Mill Road, Milwaukee 9, Wis. (End)

A new low-cost automated polyethylene packaging system



FUNCTION: Completely packages products in polyethylene film—in one operation—in your plant. Produces inexpensive loose or shrink-fit polyethylene packages around regular, odd-shaped or out-sized products of all types. **ADVANTAGES:** Uses polyethylene roll stock. Saves up to 50% on material costs over ready-made bags and other packaging methods and materials. • Boosts in-plant packaging efficiency, produces up to 30 packages per minute at reduced labor costs. • Provides a self-selling plain or printed package that protects, displays, reduces damages caused by excessive handling. • Simple to Operate—Easy to Maintain. **COST:** Complete MA Systems normally range from $2000 to $4000. **FREE OFFER:** Let the MA System test-package your product in durable, transparent polyethylene. Send us a sample, or write for complete details on this revolutionary packaging system to either: Mehl Manufacturing Company, 2057 Reading Road, Cincinnati 2, Ohio—or—Kordite Company, Macedon, New York.

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Maybe you can't compare apples and oranges, and most likely no one wants to be compared with an adhesive. But the *right* production man and the *right* adhesive can have an important effect on profits.

The right production manager not only cracks the whip, he applies an intimate knowledge of his men and machines to a production process calculated to turn out a quality product . . . at maximum profit.

Similarly, to contribute to *profitable* production, the right adhesive must do more than just adhere.

Swift's hundreds of resin adhesives for folding cartons are specifically formulated to offer the user *selectivity* in speed and machine-ability characteristics. They are both fast and cleaner machining. What's more, they have greater resistance to moisture.

Don't overlook the profit *opportunity* in properly specified, properly used folding carton adhesives. *Swift* is the informed source for prompt, courteous, and *authoritative* service. 24 strategically located Swift adhesives plants produce a complete line of folding carton adhesives for the most specific applications. Call your nearby Swift Adhesives Specialist, or write for further information: Swift & Company, Adhesive Products Department, Chicago 9, Illinois.

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For your convenience, we have also included addresses of suppliers so that you may write directly for more information.

101—Overwrapping Machines

A data sheet is available on the Model SUS heat-seal wrapping machines. These wrapping machines utilize roll-fed cellophanes, waxed papers, and a variety of other heat-sealable materials. For this sheet write: Scandia Packaging Machinery Co., Dept. PE, 500 Belleville Turnpike, North Arlington, N.J., or *circle number on card.*

102—Corrugated Boxes

Offered is a 32-page booklet—"How To Pack It In H&D Corrugated Boxes." Picturing 80 different styles of corrugated boxes designed for various purposes, the booklet describes the uses and advantages of each. For a copy write: Hinde & Dauch Div., West Virginia Pulp & Paper, Dept. PE, P.O. Box 861, Sandusky, Ohio, or *circle number on card.*

103—Chub Packaging Machine

A 2-page data sheet provides descriptive information on a chub packaging machine for meat spreads, ground beef, chili, and other semi-fluid products. The machine forms, fills, and closes 1,800 chub packages/hr. For a copy of this data sheet write: Kartridg Pak Co., Dept. PE, 1355 W. 2nd St., Davenport, Ia., or *circle number on card.*

104—Release Coating

A 4-page bulletin is available on Syl-Off silicone anti-adhesive. This paper coating imparts release characteristics and water repellancy to kraft, glassine, parchment, multi-wall bag liners, boxboard, plastic film, and other packaging materials. It is said to be permanent, noncontaminating, and nonmigrating. For this bulletin write: Dow Corning Corp., Dept. PE, Midland, Mich., or *circle number on card.*

105—Wrapping, Bundling Machines

Available is a 20-page booklet picturing a line of wrapping and bundling machines, and the types of packages each model produces. A chart is included showing optional equipment available for each machine. To receive a copy of this booklet write: Battle Creek Packaging Machines, Inc., Dept. PE, Battle Creek, Mich., or *circle number on card.*

106—Liquid, Semiliquid Fillers

The 16-page Booklet No. 501E255 describes the MS line of fillers. Models illustrated run from 6- to 30-pocket machines. Included are several charts—one groups products handled by typical viscosity classes (such as dog food, petroleum, baby food, etc.) Various attachments are illustrated as well as a number of plant operations. For a copy of this booklet write: Food Machinery & Chemical Corp., Canning Machinery Div., Dept. PE, San Jose, Calif., or *circle number on card.*

107—Scales

A catalog has been compiled to show the standard line of Exact Weight scales. Features of each model are noted and specifications are given in addition to pictures of each type. Included are: Shadograph scales, end-tower and center-tower scales, weighing machinery, automatic checkweighers, and sacking scales. To receive a copy write: The Exact Weight Scale Co., Dept. PE, 912 W. Fifth Ave., Columbus 8, Ohio, or *circle number on card.*

108—Film Packaging Equipment

A 6-page folder illustrates and describes film packaging equipment designed especially for the food industry. Included are dispensers, conveyors, sealers, code daters, and shrink tunnels. For this literature write: The Cryovac Div., W.R. Grace & Co., Dept. PE, 62 Whittemore Ave., Cambridge 40, Mass., or *circle number on card.*

109—Automatic Cartoner

Offered is a bulletin describing a cartoning machine which automatically moves cartons from flats in the hopper to closing or sealing stations, allowing for hand insertion of product. Producing sealed cartons (up to 90/min.), the machine handles glue-seal, straight-tucked and reverse-tuck cartons, and combinations of these. For this bulletin write: Container Equipment Corp., Dept. PE, 78-88 Locust Ave., Bloomfield 3, N.J., or *circle number on card.*

110—Polyethylene Film

An 18-page booklet of technical information on Visqueen film and the polyethylene resin from which it is extruded is available. This booklet discusses the effects of chemicals on the film's physical properties; its transmission of oils, vapors, and light; directional properties; and includes a section on the structure and general properties of polyethylene. To receive this booklet write: Visking Co., Div. of Union Carbide Corp., Dept. PE, 6733 W. 65th St., Chicago 38, Ill., or *circle number on card.*

111—Packaging Machines

Automatic filling, wrapping, and capping machines are described and illustrated in a pamphlet. Features of single-cylinder, twin, 4-valve, rotary, piston, open-pocket, 12-valve, and other fillers are noted. Overwrapping machines are also discussed. For a copy write: Elgin Manufacturing Co., Dept. PE, 200 Brook St., Elgin 1, Ill., or *circle number on card.*

112—Tear-Strip Applicator

A data sheet describes an automatic tear stripper. This machine features continuous rotary operation in applying tear strips to web material at speeds up to 120/min. To obtain this literature write: Charles Beck Machine Corp., Dept. PE, Church Rd., King of Prussia, Pa., or *circle number on card.*

113—Shipping Containers

A new illustrated booklet is offered to assist in the selection of the proper shipping container for particular

products. The first section of this 34-page booklet describes in detail the broad range of basic corrugated container designs. The second section discusses specialized container designs. Called "Your Packaging Guidebook," it can be obtained by writing: Olin Mathieson Chemical Corp., Packaging Div., Dept. PE, 460 Park Ave., New York 22, N.Y., or *circle number on card.*

114—Nonuniform Product Wrapper

A folder describes the RT machine for automatically packaging products of a nonuniform nature such as textiles, meats, hardware, etc. This machine uses a variety of heat-sealing materials. To receive this descriptive material write: Hayssen Manufacturing Co., Dept. PE, 13th and St. Clair, Sheboygan, Wis., or *circle number on card.*

115—Table-Top Conveyor

Information sheets, including detailed mechanical drawings, are available on the Series TC table-top chain conveyors and turntables used in conjunction with them. Chain widths are from 3¼ to 7½ in. and standard units are driven at 20 to 80 ft./min. For this information write: Conveyor Specialty Co., Inc., Dept. PE, 33 Newport Ave., North Quincy 71, Mass., or *circle number on card.*

116—Pressure-Formed Packages

An illustrated folder describes many types of pressure formed packages. Among the materials discussed are rigid acetate and polyvinyl, polyethylene and polystyrenes. For further details write: Plaxall Inc., Dept. PE, 5-26 46th Ave., Long Island City, N.Y., or *circle number on card.*

117—Imprinting Machines

An 8-page brochure illustrates and gives specifications for a number of imprinting machines. Discussed are the Whippet conveyor line marker; the Auto-Printer for high-speed work on cartons, multiwalls, etc.; No. 6 Auto-Printer for filled cartons; the Rainbow attachment for flexible packaging; the Flexo Press which prints multiwalls and flat cartons on both sides simultaneously; plus many others. For these descriptions write: Industrial Marking Equipment Co., Inc., Dept PE, 655 Berriman St., Brooklyn 8, N.Y., or *circle number on card.*

118—Corrugated Packaging

A booklet of case histories (No. 2) describes corrugated packaging problems and solutions. This booklet gives actual case histories of corrugated shipping problems involving products ranging from brick and tile to boat motors. For a copy of this booklet write: Hoerner Boxes, Inc., Dept. PE, 600 Morgan St., Keokuk, Ia., or *circle number on card.*

119—Packaging Abstracts

PACKAGE ENGINEERING magazine is offering a data sheet describing *Packaging Abstracts*, a monthly publication which abstracts articles about packaging from some 200 magazines from all over the world. Each issue is divided into 18 sections of topics pertaining to raw materials, adhesives, coating treatments, shipping containers, etc. For more information write: Package Engineering, Dept. PE, 185 N. Wabash, Chicago 1, Ill., or *circle number on card.*

120—Polyamide Films

A new series of polyamide films, called Capran, is the subject for product data sheet C-1-361. Technical data on the film's properties are presented in detail and cover such things as tensile strength, oil and fat resistance, abrasion resistance, burst and impact resistance, transparency, sealability, and the like. For this technical information write: Allied Chemical Corp., General Chemicals Div., Dept. PE, 40 Rector St., New York 6, N.Y., or *circle number on card.* *(Turn page)*

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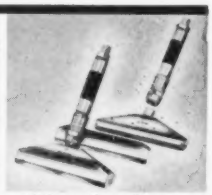
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Plunger-action valve body

Spot guns, machine mount

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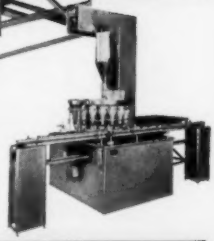


Call or write
FRAZIER & SON 20 Industrial West, Allwood, Clifton, New Jersey PRescott 8-4927

121—Glass

A revised edition of "This Is Glass," a comprehensive story on glass and glass-ceramics, has been published. This 68-page illustrated booklet reviews the history of glass and details the basic types of glass. A 2-page chart gives properties of selected glasses, and research being done with these materials is described. For a copy of the booklet write: Corning Glass Works, Dept. PE, Corning, N.Y., or *circle number on card.*

122—Stapling Tools

A 4-page brochure shows the various types of Duo-Fast stapling tools used in packaging, crating, and similar operations. It shows these staplers and nailers being used for making crates and skids, installing corrugated liners and supports, closing cases, attaching labels, lining boxcars, and other uses. To receive a copy of this Brochure No. FT-17 write: Fastener Corp., Dept. PE, 3756-64 River Rd., Franklin Park, Ill., or *circle number on card.*

123—Padding Felt

Bulletin No. 15 provides information on Ozite padding felt. This all-hair cushioning material is available in a variety of thicknesses and weights for any number of cushioning and padding needs. It is supplied in standard rolls measuring from 33 to 60 ft. long and in thicknesses from ⅛ to 1 in. For this brochure write: American Hair & Felt Co., Dept. PE, Merchandise Mart, Chicago 54, Ill., or *circle number on card.*

124—Volumetric Fillers

A 4-page brochure describes semi-automatic and automatic volumetric filling machines. These machines are designed for either short or long runs and feature a fast changeover to accommodate a number of different products. They handle powders, nuts, cereals, detergents, coffee, and similar dry products. To receive more information write: Stuyvesant Engineering Corp., Dept. PE, P. O. Box 564, Norwood, N.J. or *circle number on card.*

125—Thermoforming

A 24-page booklet is devoted to the subject of thermoforming as a method of packaging. The machinery, processes, selecting the proper materials, mold construction, molding techniques for blister packs, techniques for skin packaging, die cutting, printing, sealing, trouble spots, and a list of manufacturers of thermoforming equipment are some of the topics included. For a copy of "Thermoforming With Celanese Acetate," write: Celanese Plastics Co., Dept. PE, 180 Madison Ave., New York 16, N.Y., or *circle number on card.*

126—Adhesives

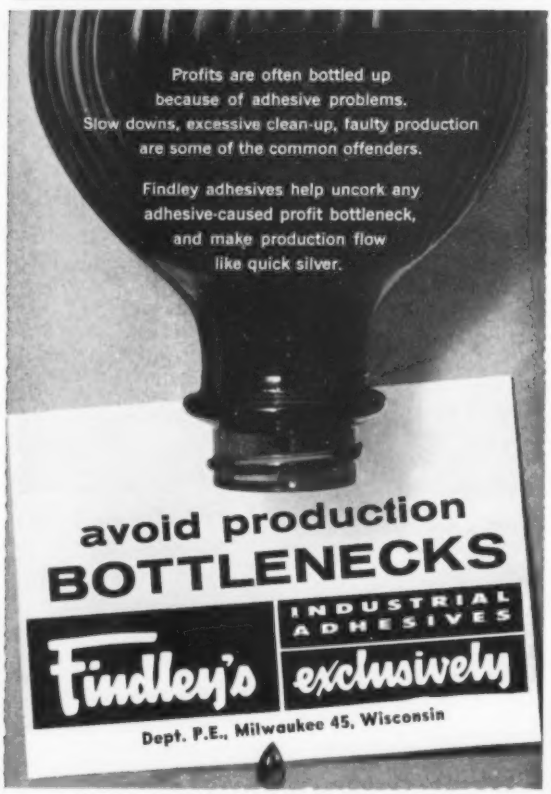
The "Arabol Adhesives Advisor" is a new 4-page quarterly covering news and ideas on adhesives. This company produces more than 600 adhesives used in the making, labeling, packaging, and shipping of products. For a copy of this publication write: The Arabol Manufacturing Co., Dept. PE, 56 Nostrand Ave., Brooklyn, N.Y., or *circle number on card.*

127—Fibreboard Packages

An illustrated brochure describes the scope of this company's activities and products such as fibreboard cans, plastic tub-type food containers, and closures. Its work in research, design, and engineering are also discussed. For this 12-page booklet write: R. C. Can Co., Dept. PE, 9430 Page Ave., St. Louis 32, Mo., or *circle number on card.*

128—Printing On Polyethylene

Technical Service Bulletin 108 discusses the printing and decorating of polyethylene. This 16-page brochure covers variations in decorating techniques for both treated and untreated low- and high-density polyethylenes. Illustrated with schematic



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We have a limited quantity of the following articles, among others. Single copies will be sent free of charge if you write us on your company letterhead.

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WVTR of aluminum foil laminates, by Mike A. Miller, J. E. Stillwagon and D. B. Strohm

Machinability of high-density polyethylene film, by Morton H. Baker

Cut cellophane costs with better machine performance, by Richard Kaffenberger

Practical pointers to package uniformity

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185 North Wabash Avenue, Chicago 1, Illinois

diagrams, the brochure compares principles of hot stamping, flexography, gravure, offset lithography, silk screening, transfer labeling, and dry offset lithography. An appendix lists some 250 sources for services, equipment, and supplies. For a copy write: W. R. Grace & Co., Polymer Chemicals Div., Dept. PE, 225 Allwood Rd., Clifton, N.J., or *circle number on card.*

129—Aluminum Foil

Explained in a new 58-page booklet is the protection provided by aluminum foil for packaging. This booklet contains details of the research and development of foil and it visually demonstrates the various properties and advantages of this material. Technical data on foil and its laminations are outlined and illustrated. Copies of this booklet are available by writing: Aluminum Company of America, Dept. PE, 1657 Alcoa Bldg., Pittsburgh 19, Pa., *on company letterhead.*

130—Reinforced Tape Chart

A wall chart illustrates how to close shipping containers with a single-strip application of reinforced sealing tape. This shipping and packaging department aid also contains instructions concerning recommended storage and handling of reinforced gummed tape. To get this wall chart write: Atlantic Gummed Paper Corp., Dept. PE, 1 Main St., Brooklyn 1, N.Y., or *circle number on card.*

131—Label Applicator

A folder describes and illustrates the Label-Aire pressure-sensitive label applicator. This unit is designed for use with roll labels and automatically places them on flat, round, cornered, or recessed surfaces. The types of packages it will label are jars, cans, cartons, cases, tops of bottles, can closures, and other rigid, semirigid, and flexible packages. To obtain this folder write: Kleen-Stik Products, Inc., Dept. PE, 7300 W. Wilson Ave., Chicago 31, Ill., or *circle number on card.*

132—Adhesives, Coatings, Sealers

A new 54-page catalog lists official government specifications for a wide variety of adhesives, coatings, and sealers. This publication lists (in numerical form) military specifications, specification definitions, intended application, and the corresponding 3M products that meet these requirements. For a copy of this government specifications catalog write: Minnesota Mining & Manufacturing Co., Adhesives, Coating, & Sealers Div., Dept. PE, 900 Bush Ave., St. Paul 6, Minn., or *circle number on card.*

133—Tape Dispensers

An illustrated 4-page brochure, "Touch-Button Tape Machines Gain Wide Acceptance," has been published. This includes a survey of four different types of industries using electric tape dispensing machines for sealing packages. For a copy of this literature write: Better Packages, Inc., Dept. PE, 254 Canal St., Shelton, Conn., or *circle number on card.* *(End)*

Errata

Robert J. Martinovich and Robert Doyle report an error in their article, "Speed up plastic bottle testing," Page 66 and ff., in our April 1961 issue. On Page 72 the ratios appeared incorrectly. Instead, they should read: average wall thicknesses $\left(\frac{t_4}{t_x}\right)$, container capacities $\left(\frac{c_4}{c_x}\right)$, and surface areas $\left(\frac{s_4}{s_x}\right)$.

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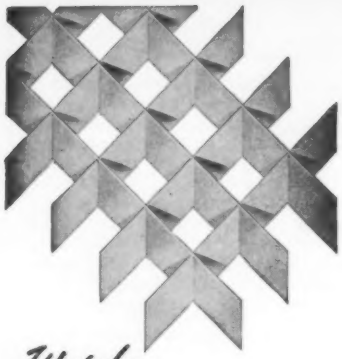

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What we think

Who pays the bill for machinery development?

Package machinery development is not advancing swiftly enough to meet the demands of today and tomorrow. One big stumbling block is the question of who pays for the development work leading to new concepts in packaging machinery.

Each party concerned thinks somebody else ought to assume the cost. A typical package-using company asserts it just can't afford this sort of development. If you tell its managers they should pay a larger share of the cost of developing new machines, they jump up and down and either dismiss your suggestion as impractical and visionary or complain bitterly that their margin of profit does not allow such "luxuries."

Similarly, when you talk to those whose companies make packaging machinery, they quickly point out that their companies are already spending a larger percentage of the sales dollar on research and development than they should. They demonstrate rather convincingly their need of having someone else pay the bill.

Currently we see the large suppliers of packages and basic materials moving in to fill this development void. Any number of them now have their own staffs of machinery development experts actively striving for new machine concepts—with the obvious intent of creating new markets for their particular package structures and materials.

Incidentally, some of these are rather vocal about not wanting to be in the machinery field. They point out that the only reason they are doing it is because no one else can—or does. Sometimes they underwrite development work by an established builder—offering to buy x number of machines. Or they turn over drawings and engineering data to others. They may even produce their own equipment—sometimes with licensing arrangements available.

A good many packaging people are not at all sure about the answer to the riddle of who should do machinery development. Our inclination is to agree with machinery manufacturers who say that package users do not realize the full value they get from new packaging machine concepts. As a result, their thinking is not conditioned to new concepts in development financing.

We are not urging a mere shifting of the load from the supplier or machine builder to the package user. We do suggest that in-plant production and structural and functional performance of the resulting package are the final arbiters. If package users are to compete effectively against world-wide competition and if production line operations are to keep up with the current developments in package materials and forms, we must have better packaging machinery.

Do users underestimate development value?

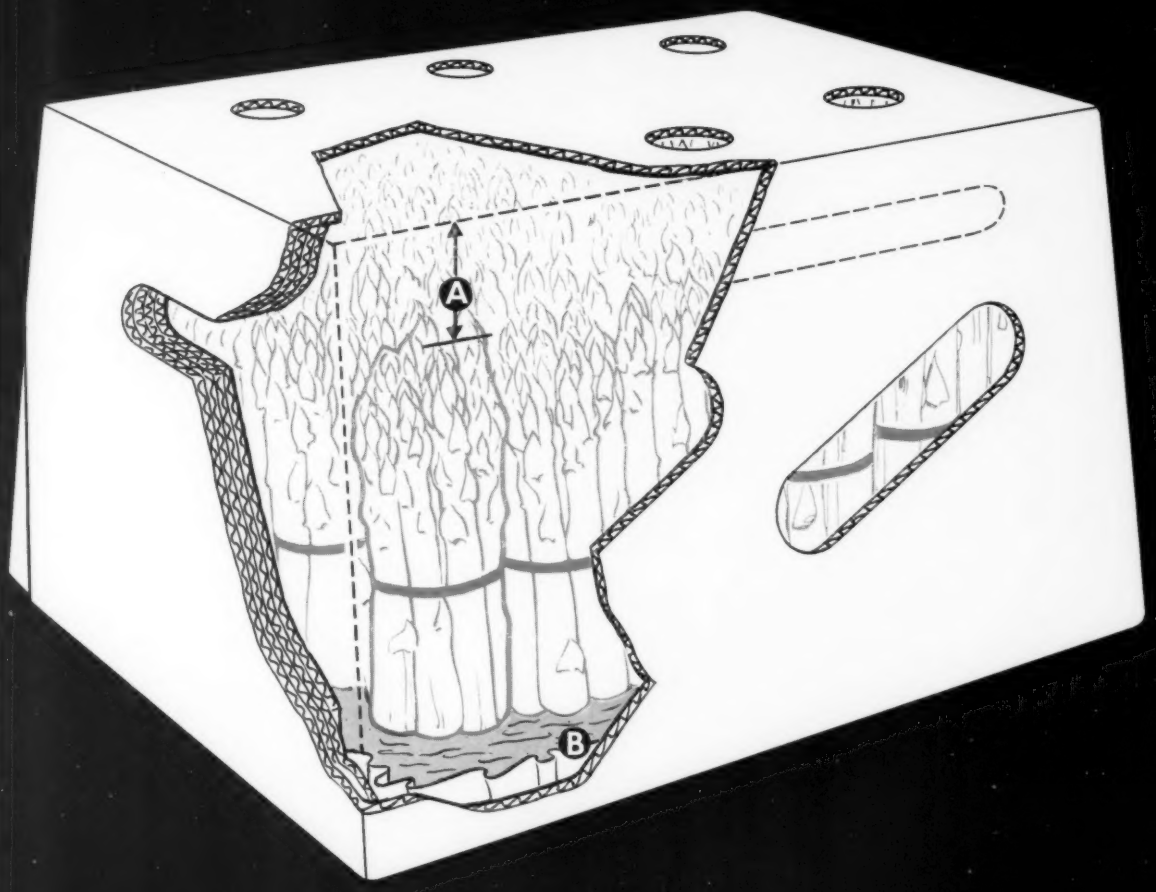
Package-using companies must apply new yardsticks to the task of finding the value of new packaging machinery. Fresh thinking by managers, accountants, engineers, and operating production men is an obvious need. Developments in packaging machinery which today seem prohibitively expensive to the typical package user may prove to be dirt cheap once we measure their worth by the correct yardsticks.

Thus the issues come into focus: package users think they can't afford to absorb machine development costs. Machinery builders frequently lack the resources for doing it. Material suppliers have gotten into this work—reluctantly. Somebody must do it, and nobody wants to pay for it.

Package users should take the lead in finding a way out of this difficulty. They should invite material and equipment suppliers to get together with them—not for mere brainstorming but to take a fresh tack on an old problem. Finding new ways to finance machinery development themselves may strike users as too costly, but it all seems much cheaper than failing to stay competitive.

Bruce Hollingsworth

Editor



Three-inch space (A) permits asparagus to grow and water-filled waxed kraft tray (B) keeps it from drying out.

International Paper's new water-tray container allows asparagus to grow while it is being shipped

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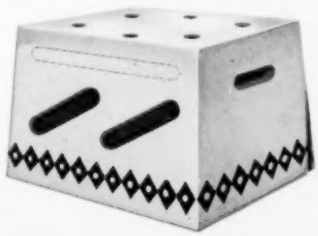

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